

COAL-MINING.

Though this investigation was undertaken chiefly with a view of ascertaining the wages paid in the manufacturing industries, it was deemed best occasionally to secure rates in connection with work that can not be classed strictly as manufacturing, but which is very closely related to manufacturing industries. Coal, copper, and ironstone mining are among these.

The result of the inquiry into the wages of coal-mining is by no means as satisfactory as could have been wished. Of more than 50 schedules sent out to important mines, but 8 are returned. These are all from bituminous mines, there not being one from the important anthracite field of eastern Pennsylvania. From other sources, however, I have secured the rates of wages paid to certain classes of labor in anthracite mining since 1869, and have also been able to procure some very interesting statements as to the rates of wages paid per ton to miners in bituminous mines for a series of years. It is but fair to say in regard to the very meager returns in this industry that in many instances the failure to give the rates arises not from any want of inclination, but from the fact that information is not available. At many mines work has been carried on in such a way that but scanty records remain.

One of the most interesting statements received outside of the tabulations is that from the Fort Pitt Coal Company, whose mines are located on the Panhandle railroad, near Pittsburgh. This statement gives the price of coal, and the rates per 100 bushels for mining the same, for each month from January, 1870, to December, 1879. The price is per 100 bushels of 76 pounds each, of screened coal run over a 1½-inch screen. The vein is 5 feet.

Table showing prices of coal run over 1½-inch screen, f. o. b. cars, Union yard, Pittsburgh, Pennsylvania—per 100 bushels of 76 pounds each.

NOTE.—The general average for 10 years is \$6 61; average for the last 5 years, \$5 89; highest price, \$9 50; lowest price, \$4 00.

Months.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
January	\$5 00	\$5 75	\$6 00	\$5 50	\$5 50	\$6 00	\$6 50	\$7 50	\$7 50	\$7 50
February	5 25	4 75	5 75	5 50	5 50	7 50	9 50	7 50	7 50	7 50
March	5 00	4 75	5 75	5 25	6 50	8 00	9 50	7 50	7 50	7 50
April	4 75	4 75	5 75	5 25	6 50	8 00	9 50	7 50	7 50	7 50
May	4 75	4 75	5 75	5 25	6 25	8 00	9 50	7 50	7 50	7 50
June	4 75	4 75	5 25	5 25	6 25	7 50	9 50	7 50	7 50	7 00
July	4 75	4 00	5 25	5 25	6 00	7 50	9 50	7 50	7 50	7 00
August	4 75	4 00	5 75	5 25	6 00	7 50	9 50	7 50	7 50	7 00
September	4 75	4 00	5 75	5 25	5 50	7 00	9 50	8 00	7 50	7 50
October	5 50	4 25	5 75	5 25	5 50	7 00	9 50	8 75	7 50	7 50
November	6 00	4 25	5 75	5 25	5 50	7 00	8 50	9 50	7 50	7 50
December	6 00	4 25	5 75	4 75	5 50	6 50	8 50	9 50	7 50	7 50
Average	5 15	4 52	5 69	5 26	5 87	7 46	9 33	7 98	7 60	7 57

a Price advanced on account of decision of arbitrators.

b Price made by Railroad Coal Exchange from November, 1872, until November, 1873.

Table showing prices of mining coal on railroads entering the city of Pittsburgh, Pennsylvania, for coal run over a 1½-inch screen—per 100 bushels of 76 pounds each.

NOTE.—Prices range from \$1 75 (in decrease 1878) to \$5 00 (1872 and 1873). General average for twelve years, \$3 40; for last five years, \$2 59.

Months.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
January	\$2 60	\$2 00	\$3 00	\$2 50	\$2 75	\$4 00	\$5 00	\$4 00	\$1 00	\$4 00	\$4 00	\$1 00
February	2 60	2 00	3 00	2 50	2 50	4 00	5 00	4 00	4 00	4 00	4 00	4 00
March	2 50	2 60	2 50	2 50	3 00	4 00	5 00	4 00	4 00	4 00	4 00	4 00
April	2 28	2 50	2 50	2 50	3 00	4 00	5 00	4 00	4 00	4 00	4 00	3 50
May	2 28	2 50	2 50	2 50	3 00	3 75	5 00	4 00	4 00	4 00	4 00	3 50
June	2 28	2 50	2 50	2 50	3 00	3 50	5 00	4 00	4 00	3 50	4 00	3 50
July	2 28	1 90	2 50	2 50	3 00	3 50	5 00	4 00	4 00	3 50	4 00	3 50
August	2 28	1 00	3 00	2 50	3 00	3 50	4 00	4 00	4 00	3 50	4 00	3 50
September	2 40	2 28	3 00	2 50	2 50	3 25	4 00	4 00	4 00	4 00	4 00	3 50
October	2 75	2 28	3 00	2 50	2 50	3 00	4 00	4 50	4 00	4 00	4 00	4 00
November	3 50	2 28	3 00	2 37	2 50	3 00	4 00	5 00	4 00	4 00	4 00	4 00
December	3 00	2 28	3 00	2 00	2 50	3 00	3 20	5 00	4 00	4 00	4 00	4 00
Average	2 57	2 36	2 79	2 45	2 77	3 55	4 61	4 20	4 00	3 87	4 00	3 75

a Paid according to decision of board of arbitrators.

b Three prices this month, viz. \$1 75, \$2, and \$2 25; average, \$2.

STATISTICS OF WAGES—COAL-MINING.

A correspondent of *Saward's Coal Trade Journal*, New York city, gives a table of prices of mining bituminous coal in several districts in the West for each month from January, 1876, to December, 1881, inclusive. These are as follows:

Table showing prices of mining coal at the Fort Pitt Coal Company's mines, Pittsburgh, Pennsylvania, district—5-foot vein, 1½-inch screen, 2,000 pounds per ton.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1876.....	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65	\$0 60	\$0 52
1877.....	75	75	65	65	65	65	65	75	75	75	75	75
1878.....	70	70	70	65	65	50	50	50	00	60	60	60
1879.....	70	70	65	60	60	60	60	60	62	70	92	70
1880.....	92	92	92	92	70	70	70	70	79	92	92	92
1881.....	92	92	92	92	92	92	92	92	92	1 05	1 05	1 05

Table showing prices of mining coal at W. H. Brooks & Son's Brooks mines, in Hocking Valley, Ohio, district—6-foot vein, 1½-inch screen, 2,000 pounds per ton.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1876.....	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 60	\$0 60
1877.....	50	50	50	50	50	50	50	50	50	50	50	50
1878.....	50	45	45	40	40	40	40	50	50	50	50	50
1879.....	50	50	50	50	50	50	50	50	50	60	75	1 00
1880.....	80	80	80	80	80	80	70	70	70	80	80	80
1881.....	80	80	80	80	80	70	70	70	80	80	80	80

Table showing prices of mining coal at Pierce Coal Company's Lackawannock mines, in Shingo Valley, Pennsylvania, district—4-foot vein (basis), 1-inch screen, 2,150 pounds per ton.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1876.....	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50
1877.....	50	50	50	50	50	50	50	50	50	50	50	50
1878.....	50	50	50	50	50	50	50	50	50	50	50	50
1879.....	50	50	50	50	50	50	50	50	50	60	60	70
1880.....	70	80	80	80	80	80	80	80	65	65	65	65
1881.....	65	65	65	65	65	65	65	65	65	75	75	75

Table showing prices of mining coal at T. J. Skidmore & Company's Mineral Ridge mines, in Allegheny River, Pennsylvania, district—3-foot 2-inch vein, 1½-inch screen, 2,000 pounds per ton.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1876.....	\$0 75	\$0 75	\$0 75	\$0 75	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65	\$0 65
1877.....	65	65	65	65	65	65	65	65	65	65	65	65
1878.....	65	65	65	60	60	60	60	60	60	60	60	60
1879.....	60	60	60	50	50	50	50	50	50	50	60	50
1880.....	50	50	70	70	60	60	60	60	60	60	60	60
1881.....	60	60	70	70	70	70	70	70	70	80	80	80

Table showing prices of mining coal at S. H. Smith's Ben's Creek mines, Allegheny Mountain, Pennsylvania, district—4-foot vein, run of mines (no screen), 2,240 pounds per ton.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1876.....	\$0 45	\$0 45	\$0 43	\$0 43	\$0 40	\$0 40	\$0 40	\$0 40	\$0 35	\$0 35	\$0 35	\$0 30
1877.....	35	35	35	35	35	35	35	35	35	35	35	30
1878.....	30	30	30	30	30	30	30	30	30	30	30	30
1879.....	30	30	30	30	30	30	30	30	30	35	45	45
1880.....	45	45	45	45	45	45	45	45	45	45	45	45
1881.....	45	45	45	45	45	45	45	45	40	45	50	50

The wages for anthracite-coal mining since 1869 have been on what is known as the "basis system". From a very interesting review of the operations of this system in the Schuylkill coal region from its establishment in 1869, supplemented by some statements furnished to me by Mr. F. B. Gowen, I am enabled to give the following statements as to the rates of wages for the classes named. The miners' wages are only for those miners working at days' work, and are clear of all costs. The following letter addressed by Mr. F. B. Gowen, president of the Philadelphia & Reading Coal & Iron Company, to his mines superintendent upon the wages question for the year 1880 will explain the basis upon which wages are arranged. The term "\$2 50 basis" means when coal is \$2 50 per ton at Schuylkill Haven:

You can say to your men that the wages for January will be but 4 per cent. below the basis; that we expect to run from two-thirds to three-fourths time for the winter, which will be much better winter's work than we have ever before made; that full work may be expected after the opening of navigation; that the wages for 1880 will be regulated, as they have been during the past year, by the price of coal at Schuylkill Haven, with minimums governed by the rate of tolls and freights on the railroad from Schuylkill Haven to Philadelphia; that the basis will be reached by the 1st of April, and that I believe the price of coal during the season will yield a rate of wages the average of which will be above the basis.

The wages paid on the \$2 50 basis are as below:

Engineers, \$60 per month.	Outside men, \$9 per week.	Car-loaders, \$11 to \$13 per week.	Loaders, \$10 per week.
Firemen, \$9 50 per week.	Platform men, \$9 to \$10 per week.	Slate-pickers (boys), \$2 50 per week.	Miners, when working by
Blacksmiths, \$11 per week.	Dump-chute men, \$3 per week.	Slate-picker, boss, \$9 per week.	week, \$11 70 to \$15.
Carpenters, \$9 to \$12 per week.	Dirt-bank men, \$9 per week.	Starters (inside), \$10 50 per week.	Drivers, \$10 per week.

The following are the rates of wages paid to anthracite miners, inside labor, and outside labor, per week, for the years and months named, from January, 1869:

Months.	1880.			1879.			1878.			1877.			1876.			1875.		
	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.
January	\$11 12	\$0 41	\$8 55	\$0 80	\$7 02	\$7 20	\$0 30	\$7 02	\$7 20	\$8 54	\$7 23	\$0 57	\$11 82	\$10 00	\$0 00	\$11 70	\$0 00	\$0 00
February	10 70	0 11	8 28	0 30	7 02	7 20	0 88	8 32	7 50	9 13	7 72	7 02	11 93	10 00	0 00	11 70	0 00	0 00
March	11 58	0 80	8 01	0 30	7 02	7 20	0 86	7 02	7 20	9 01	7 02	0 03	11 47	9 70	0 00	11 70	0 00	0 00
April	11 58	0 80	8 01	0 30	7 02	7 20	0 88	8 32	7 50	8 78	7 43	0 75	11 58	0 80	0 00	11 70	0 00	0 00
May	11 58	0 80	8 01	0 30	7 02	7 20	0 88	8 32	7 50	8 31	7 13	0 39	10 88	0 21	0 00	11 70	0 00	0 00
June	11 47	0 70	8 82	0 30	8 32	7 50	0 83	8 32	7 50	8 19	0 03	0 30	11 47	0 70	0 00	.....	.....	.....
July	11 68	0 80	8 01	0 00	8 32	7 50	10 53	8 01	8 10	8 10	0 03	0 30	11 28	0 50	0 00	12 05	10 20	0 00
August	11 70	0 00	0 00	10 30	8 71	7 02	10 53	8 01	8 10	0 30	7 02	7 20	11 58	0 80	0 00	11 93	10 10	0 00
September	11 70	0 00	0 00	10 30	8 71	7 02	10 53	8 01	8 10	0 30	7 02	7 20	0 40	8 02	7 20	11 93	10 10	0 00
October .....	.....	.....	.....	10 30	8 71	7 02	10 53	8 01	8 10	0 30	7 02	7 20	0 24	7 82	7 11	11 93	10 10	0 00
November .....	.....	.....	.....	10 70	0 11	8 28	10 53	8 01	8 10	8 10	0 03	0 30	0 01	7 02	6 93	12 40	10 40	0 00
December .....	.....	.....	.....	10 70	0 11	8 28	10 53	8 01	8 10	8 78	7 43	0 75	8 78	7 43	6 75	12 42	10 40	0 00
Averages	11 43	0 09	8 81	0 01	8 88	7 62	10 10	8 55	7 77	8 77	7 42	0 74	10 71	9 06	8 34	11 93	10 10	0 00

Months.	1874.			1873.			1872.			1871.			1870.			1869.		
	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.	Miners.	Inside labor.	Outside labor.
January	\$13 01	\$11 77	\$10 70	\$13 00	\$11 00	\$10 00	\$13 00	\$11 00	\$10 00	.....	.....	.....	.....	.....	.....	.....	.....	.....
February	14 17	11 00	10 00	13 52	11 44	10 40	13 00	11 00	10 00	.....	.....	.....	.....	.....	.....	.....	.....	.....
March	13 78	11 00	10 00	13 52	11 44	10 40	13 00	11 00	10 00	.....	.....	.....	.....	.....	.....	.....	.....	.....
April	18 00	11 00	10 00	13 00	11 00	10 00	11 00	10 00	9 18	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	13 00	11 00	10 00	13 00	11 00	10 00	11 00	10 00	9 18	\$13 78	\$11 00	\$10 00	.....	.....	.....	.....	.....	.....
June	13 00	11 00	10 00	13 00	11 00	10 00	13 00	11 00	10 00	12 48	10 50	9 00	.....	.....	.....	.....	.....	.....
July	13 13	11 11	10 10	13 20	11 22	10 20	13 00	11 00	10 00	12 00	10 23	9 30	.....	.....	.....	16 10	13 80	12 05
August	13 13	11 11	10 10	13 30	11 33	10 30	13 00	11 00	10 00	12 22	10 34	9 40	\$12 85	\$11 01	\$10 00	12 00	16 20	14 85
September	13 05	11 55	10 50	13 52	11 44	10 40	13 00	11 00	10 00	12 00	10 23	9 30	11 00	10 02	9 19	14 00	12 00	11 00
October	13 30	11 33	10 30	13 52	11 44	10 40	13 00	11 00	10 00	13 00	11 00	10 00	11 60	10 02	9 19	15 40	13 20	12 10
November	14 17	11 00	10 00	13 05	11 55	10 50	13 00	11 00	10 00	13 00	11 00	10 00	10 54	0 03	8 28	10 10	13 80	12 05
December	13 52	11 44	10 40	14 04	11 88	10 80	13 00	11 00	10 00	18 00	11 00	10 00	10 54	0 03	8 28	14 00	12 00	11 00
Averages	13 48	11 41½	10 37½	13 37	11 31	10 28	12 82½	10 84½	9 86½	12 70½	10 75½	9 77½	11 46½	9 82½	9 00½	15 70	13 46	12 33½

The basis of wages for 1880, as already intimated, was what is known as the "2 50 basis"; or, in other words, when coal sold at \$2 50 at Schuylkill Haven the rates of wages for miners paid by the week were \$11 70, inside labor \$9 90, and outside labor \$9 00 per week. In arriving at the price of coal, five collieries are drawn. Returns are received from these collieries as to the selling price, and the average of these selling prices determines whether the wages shall be the basis—whether there shall be a percentage off the basis or a percentage added to the basis. For example, the circular of the Schuylkill Coal Exchange, issued April 8, 1880, fixing the rates of wages for March of that year, is as follows:

The following collieries, drawn to give prices of coal sold in March, 1880, for deciding the rate of wages to be paid in that month, make the following returns:

Lawrence Colliery (Lawrence, Merkle & Co).....	\$2 43 ⁷ / ₁₀
W. Shenandoah Colliery (P. & R. C. & I. Company)	2 46
William Penn Colliery (William Penn Coal Company)	2 48
Mount Carmel Shaft Colliery (P. & R. C. & I. Company).....	2 48
Kohinoor Colliery (Richard Heckscher & Company).....	2 43 ⁸ / ₁₀

The average of these prices being \$2 45⁷/₁₀, the rate of wages to be paid in March, 1880, is one (1) per cent. below \$2 50 basis. Having examined these returns and compared them with above, we find this result correct.

JOHN SHIPPEN,
JOHN P. HOBART,
Committee.

It will be seen by the above that the rate of wages to be paid for the month of March is 1 per cent. below the basis. This is caused by the price of coal alone, which has reached a figure to render the plan of participation in the tolls inoperative. According to that plan, with the tolls at \$1 90, the rate of wages, even if the price of coal did not justify it, would be 4 per cent. below basis, but the coal prices now render that beneficent measure unnecessary.

During the year 1880, up to September, the averages of the five collieries drawn and the percentages off the basis were as follows:

Jan., \$2 35, 5 per cent. off.	Apr., \$2 46 ³ / ₁₀ , 1 per cent. off.	July, \$2 46 ¹¹ / ₁₀ , 1 per cent. off.
Feb., 2 26 ¹ / ₁₀ , 8 per cent. off.	May, 2 46, 1 per cent. off.	Aug., 2 49, on the basis.
Mar., 2 45 ⁷ / ₁₀ , 1 per cent. off.	June, 2 49 ³ / ₁₀ , 2 per cent. off.	Sept., 2 51 ¹ / ₁₀ , on the basis.

Allowances or deductions.—At the coal-mines reporting there have been few opportunities for what would be termed extra earnings. The hours of labor of the miners in the bituminous mines of the West, few of which are worked by shafts, are varied at the pleasure of the operative himself, and while other classes of labor may occasionally, in cases of great demand, make extra hours, the opportunities are quite infrequent.

In but one case are any allowances reported, and what these are is not stated.

With rare exceptions, miners pay for the powder and oil they use, and also for the sharpening of their tools. The amount that this would reduce the wages given in the tables varies, one schedule reckoning it as high as 10 per cent. and another as low as 4 per cent. Some miners also have laborers to assist them in loading.

Payments.—Several of the establishments reporting use store-orders. Indeed, it is probable that in certain sections of the country the use of "truck" is more frequent in the coal-mining industry than in any other employment. In some cases its use is a necessity, the number of employes at the mines being such, and the mines being so situated, that it is really an advantage to the workmen to have the proprietor of the mine furnish them with goods. This, however, is not always the case, there being no doubt that in many instances coal operators have stores at their works, and insist that the men shall deal at them, for the purpose of increasing the profits of mining.

The usual interval of payment at the mines reporting is monthly. There is one case of a change from monthly to every two weeks, and one mine reports that since 1856 it has paid its employes every two weeks.

Hours of labor.—It is very difficult to give the hours of labor of miners. They work by the piece, and generally go into the pit and come out as suits them. The lowest number of hours given is that of a Kentucky works, at which 7¹/₂ hours are worked. Other mines report 8 and 9 hours, the highest being 10. The other labor about the mine is employed 9, 10, and 11 hours. At one mine pumpmen and firemen work 12 hours a day in two shifts.

Regularity of employment.—There is considerable irregularity of employment at the mines reporting, the chief causes of idleness being strikes, and the light demand in summer. There are few employments in which the irregularity is greater than in this.

Relation of wages and labor to selling price and cost.—The statements under this head are of but little importance, and do not permit of any general deductions.

Efficiency of labor and labor saving machinery.—There has been but little change in the efficiency of labor at the mines reporting.

At none of the mines reporting has any labor-saving machinery been introduced, except in one instance, when a mine locomotive was introduced to take the place of mules and their drivers for hauling coal out of the mine. Though quite a number of coal-mining machines have been invented, they had been used up to the census year in but very few instances, and at none of the mines reporting.

Healthfulness and accidents.—Mining is generally regarded as dangerous and unhealthful. It will be observed, however, from an inspection of the remarks in connection with the tabulations, that in nearly every case where any statement is made on this point the opposite view is taken. While it is conceded that accidents do occur, it is claimed, that they are the result of carelessness on the part of the men, and could be avoided in almost every case by the exercise of proper watchfulness and precautions.

Rates of wages in Great Britain.—For purposes of comparison with our own tables, the following rates of wages paid to coal-miners in 1880 in several districts of England and Scotland, taken from the *Miscellaneous Statistics of the United Kingdom*, Part XI, are given :

Proportion of persons employed per 100 hands.	Description of occupations.	Employés.	Rates of wages.	Hours of labor per week.	Proportion of persons employed per 100 hands.	Description of occupations.	Employés.	Rates of wages.	Hours of labor per week.
	GLASGOW AND NEIGHBORHOOD.		Per week.			NORTH STAFFORDSHIRE DISTRICT—cont'd.		Per day.	
1.8	Overmen	Men	\$7 74	60	3	Pony-putters	Lads and boys	\$0 56	54
54.0	Hewers	Men	a 6 11	60	3	Drivers	Lads and boys	88	54
1.0	Tunnelers (stonemen)	Men	a 0 05	60	2	Trappers	Lads and boys	18	54
3.5	Wastemen	Men	5 44	60	3	Greasers	Lads and boys	54	54
0.7	Banksmen	Men	4 23	57	2	Furnacemen	Men	66	84
2.0	Inspectors on the heap	Men	4 84	57	1	Switch-keepers	Men	60	54
2.6	Weighmen	Men	5 50	63	2	Lamp-keepers	Men	97	84
1.0	Screenmen and bank laborers	Men	4 23	57			Lads and boys	36	84
0.6	Rolley way men	Men	4 23	57	2	Horse-keepers	Men	97	84
2.3	Onsetters	Men	5 08	64			Lads and boys	44	84
15.5	Drawers	Lads	a 4 54	60	3	Cartmen	Men	77	54
2.0	Drivers	Lads	3 75	60	2	Smiths	Men	1 03	54
1.0	Greasers	Lads	8 08	57	1	Smiths, foremen	Men	1 63	58
0.1	Furnacemen (under ground)	Men	5 08	60	3	Joiners	Men	1 09	58
0.6	Working coal-cutting machine	Men	5 32	60	1	Wagonwrights	Men	1 09	58
1.0	Smiths	Men	6 41	57	3	Enginemen	Men	1 09	58
1.0	Joiners	Men	5 63	57	3	Firemen	Men	79	58
2.8	Enginemen	Men	6 78	84	3	Plate-layers	Men	79	54
2.0	Furnacemen (above ground)	Men	5 08	84	100				
2.0	Statthmen	Men	6 41	60					
100.0						WOLVERHAMPTON AND NEIGHBORHOOD.		Per week.	
	NORTH STAFFORDSHIRE DISTRICT.		Per day.			Overmen	Men	10 89-12 10	66
1	Overmen	Men	\$1 63	54		Deputy overmen	Men	7 26- 8 47	66
2	Deputy overmen	Men	1 21	54		Hewers	Men	5 32	45
26	Hewers	Men	97	54		Tunnelers (stonemen)	Men	5 08	48
1	Tunnelers (stonemen)	Men	97	54		Master shifters	Men	5 32	48
1	Master shifters	Men	1 33	54		Shifters	Men	4 60	48
1	Shifters	Men	97	54		Wastemen	Men	5 32	48
4	Master wastemen	Men	1 08	54		Banksmen	Men	4 60	54
4	Wastemen	Lads and boys	44	54		Helpers-up	Men	5 32	48
6	Banksmen	Men	81	54		Drivers	Men	3 39- 3 87	48
1	Inspectors on the heap	Men	1 19	54		Switch-keepers	Men	3 27	54
1	Weighmen	Men	97	54		Horse-keepers	Men	5 08	58
3	Screenmen and bank laborers	Men	81	54		Cartmen	Men	4 84	48
3	Rolley way men	Men	79	54		Smiths	Men	5 81	54
3	Onsetters	Men	1 08	54		Joiners	Men	6 53	54
3	Helpers-up	Lads and boys	70	54		Enginemen	Men	6 29- 7 26	77
4	Hand-putters	Men	85	54		Firemen	Men	4 11½	77
		Lads and boys	58	54		Plate-layers	Men	4 11½	54

a For piece-work.

STATISTICS OF WAGES—COAL-MINING.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Black Diamond Coal Mining Company, Somerville, California.

Classes of employés.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Superintendent.....	Month..	\$150 00	\$130 00	\$130 00	\$130 00	\$130 00	\$130 00	\$130 00	\$130 00	\$130 00	\$130 00	\$130 00
Mining overseer, or pit boss..	Day....	3 00					3 00					3 00
Miner on contract.....	Yard...	1 00- 75					1 00- 75					1 00- 1 25
Miner on wages.....	Day....	3 00					3 00					3 00
Bucker or putter.....	do....	2 25					2 25	2 50	2 50	2 50	2 50	2 50
Loader.....	do....	2 25					2 25					2 50
Driver, inside:												
Man.....	do....	2 25					2 25					2 50
Boy (15 to 19 years).....	do....	1 75					1 75					1 75
Cageman.....	do....	2 25					2 25					
Doorkeeper, boy (15 to 18 years).	do....	1 00					1 00					1 00
Pumpman.....	do....	2 25					2 25					
Repairman.....	do....	3 00					3 00					3 00
Inspector.....	do....	3 00					3 00					
Engineer.....	do....	3 00					3 00					3 00
Blacksmith or carpenter.....	do....	3 00					3 00					3 50
Machinist or boilermaker.....	Month..	125 00					125 00					125 00
Cleaner, boy (15 years).....	Day....	1 25					1 25					1 25
Carman.....	do....	2 25					2 25					2 50
Fireman.....	do....	2 50					2 50					2 50
Hostler.....	do....	2 50					2 50					2 50

REMARKS.—It is stated in this return that opportunities for a slight increase of wages for over-work exists on occasions of extraordinary demands for coal, but this has been included in the rates given in the table.

No allowances or privileges are granted to employes.

The company provides the necessary tools and materials to all classes, except miners working by the yard, who furnish their own powder.

Monthly payments are made wholly in cash, except when the men

request orders upon independent merchants; the company having no store of its own.

Ten hours a day are worked by miners, surfacemen, and skilled labor; 12 hours by pumpmen and firemen.

The mine has been operated continuously since 1866, irregularity of demand having at times caused variation in the number of men employed.

There has been no change in the efficiency of labor, and no labor-saving machinery is in use.

Conrad Reincke, Belleville, Illinois.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1879.	1878.	1877.	1876.	1875.	1874.
Superintendent.....	Month....	\$60 00	\$60 00	\$60 00	\$60 00	\$70 00	\$70 00	\$70 00
Miner on wages.....	Day.....	2 74	2 29	1 59	2 01	1 74	2 52	2 69
Inside or outside mule-driver.....	do.....	1 73	1 53	1 53	1 73	1 73	1 73	1 73
Blacksmith.....	do.....	1 02	1 73	1 73	1 92	1 92	1 92	1 92
Engineer.....	do.....	2 30	1 92	1 92	2 30	2 30	2 30	2 30

REMARKS.—There are no opportunities for extra earnings from over-time at this mine, and no allowances are given to employes.

Miners are obliged to furnish their own powder, oil, and tools, and to keep the latter in repair. The expense thus incurred would amount to about 4 per cent. of the wages paid, and has not been considered in making up the above table.

Payments, which have always been in cash, from 1874 to 1878 were monthly; from 1878 to 1880 every two weeks.

The hours of labor have been 9 for miners and 10 for other employes.

The mine has been worked regularly 9 months a year, the idleness, which occurs in summer, being due to the decreased consumption of coal.

The owner of the mine states that strikes have been quite frequent.

No change has taken place in the efficiency of labor.

The occupation is stated to be healthful. Accidents are rare, and seldom occur when the men working use due precaution, those that do occur being generally caused by negligence of the miners and not by defective operation of the mine.

STATISTICS OF WAGES—COAL-MINING.

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Port Byron Coal Mines, Port Byron, Illinois.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Superintendent	Month ..	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00
Mining overseer, or pit boss ..	Day	2 60	2 60	3 20	3 20	3 20	2 60	2 60	2 60	2 60	2 60
Civil engineer	do	2 88	2 88	2 88	2 88	2 88	2 88	2 88	2 88	2 88	2 88
Clerk	do	1 53	1 53	1 84	1 92	1 92	1 92	1 92	1 92	1 92	1 92
Miner on contract	Ton	80	75	85	90	1 00	1 00	1 00	1 25	1 25	1 50
Miner on wages	Day	1 80	1 80	1 80	2 00	2 00	2 00	2 00	2 25	2 25	2 25
Inside laborer	do	1 75	1 80	1 80	1 80	2 00	2 00	2 00	2 00	2 00	2 00
Outside laborer	do	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Inside mule-driver	do	1 35	02- 04	1 35	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Outside mule-driver	do	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Weighmaster	do	1 73	1 92	1 92	1 92	1 92	1 92	1 92	1 92	1 92	1 92
Checkweighman (b)	do										
Carpenter	do	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 80	1 80	1 80
Blacksmith	do	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00

a Per car.

b Checkweighman is paid by miners, and is allowed an average of the eight best miners' wages.

Brazil and Chicago Coal Company, Brazil, Indiana.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Mining overseer, or pit boss ..	Day	\$3 46	\$3 46	\$3 07	\$3 07	\$3 07	\$3 40	\$3 40	\$3 84	\$3 84	\$3 84	\$3 84
Inside or outside mule-driver ..	do	2 50	2 00- 2 80	2 00- 2 25	2 00- 2 25	2 00- 2 12½	2 00	3 00- 2 50	3 00- 3 00	3 00- 3 00	3 00	3 00
Miner	Ton	90- 1 00	65- 90	75- 65	75- 65	75- 65	85- 75	1 00- 85	1 20- 1 00	1 10- 1 20	1 00	1 00

REMARKS.—In times of great demand there are at these works some opportunities for extra earnings, both from over-time and from unusual diligence, which have not been considered in the above table.

No allowances are given, and miners furnish their own tools and powder. They also pay about 1 cent per ton for sharpening tools; other repairs are additional to this. Powder, when used, costs the miner about 10 per cent. of his earnings.

The company states that for the purpose of assisting "shiftless" men through the month, they are given store-orders and due-bills, amounting to about 20 per cent. of their earnings, the balance being paid in cash on the second Saturday of the month.

The hours of labor are 9 for men employed by the day.

The works have been operated, on an average, 9½ months a year, the idleness occurring in the summer, when demand for coal is light.

Strikes are stated to occur about as frequently in this as in other

mining districts, and generally arise from differences as to wages. The union is generally successful.

The following statement is made in connection with this schedule, regarding the labor cost of mining a ton of coal, and the percentage of wages to total cost:

Date.	Labor cost.	Percentage of wages to cost.
1870.....	\$2 25 to \$3 00	Per cent. 66
1875.....	1 00 to 1 50	85
1880.....	1 75 to 2 25	75

The statement is made here, as elsewhere, that mining is not an unhealthful business, and that accidents are as a rule caused by carelessness of the miners.

Pine Hill Coal Company, Pine Hill, Kentucky.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.										
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Mining overseer, or pit boss ..	Day	\$2 25	\$2 00		\$2 00							
Clerk (in store)	do	90- 1 53	90- 1 53		90- 1 53	\$0 90- 1 53	\$0 90- 1 53	\$0 90- 1 53	\$0 90- 1 53	\$0 90- 1 53	\$0 90- 1 53	\$0 90- 1 53
Inside or outside laborer	do	1 25	1 25		1 25							
Miner (a)	Bushel..	4½	4		3½	4	4½	4½		4½	5	5

a Miners are paid per bushel, and earn from \$1 to \$6 per day. The average daily earnings are \$2.

STATISTICS OF WAGES—COAL-MINING.

Pine Hill Coal Company, Pine Hill, Kentucky—Continued.

REMARKS.—There are but few opportunities for extra earnings at these works.

Some allowances are made which would increase regular wages from 3 to 5 per cent., and are not included in the above rates.

Miners buy their own tools and powder and pay their underhands, which would decrease their earnings 10 per cent. From the wages of other classes of employes no deductions are made.

It is the custom at these works to distribute to the men every day checks, which are good for merchandise at the company's store, and to pay the balance in cash on the 10th of each month.

Miners who are not required to work a certain length of time average 7½ hours a day. Day laborers begin work at 6 a. m., have 1 hour, from 12 to 1, and stop at 6 p. m., both winter and summer. The labor of this class is light, consisting of hauling with mules, laying track, working on grades, etc.

The works are operated 9 months a year, the idleness being caused

by light demand for coal and by strikes. It is stated that strikes have been of frequent occurrence, having arisen from attempts to reduce the price of labor in the summer season, and have resulted in heavy losses to miners and operators.

The selling price of coal per bushel of 76 pounds was 12 cents in 1870, 9 cents in 1880, the average price for the 10 years being 7½ cents.

There has been a marked increase in the efficiency of labor. This has arisen from the better acquaintance of the men with the nature of the coal to be mined. As this coal is very unlike that of Pennsylvania the miners have been obliged to adapt themselves to its peculiarities. No labor-saving machine has been introduced.

The trade is regarded as neither very dangerous nor unhealthful. But 3 men out of a working force of 100 have been killed in 10 years by mines falling in. All danger may be avoided by the proper placing of props in the entries, etc., to support the hill above.

An establishment in Maryland.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.
Superintendent	Month ..	\$225 00	\$225 00	\$233 00	\$250 00	\$250 00	\$250 00	\$250 00	\$208 33
Mining overseer, or pit boss	Day	3 15½	3 15½	3 15½	3 05½	3 46	3 46	3 46	3 27
Clerk	do	2 30½	1 92½	1 73	1 96	2 30½	2 30½	2 30½	2 30½
Miner on wages	Ton								65
Miner on wages	Day	2 08½	1 27	1 50	1 10½	1 54	1 81	1 77	
Inside laborer	do	1 20	1 04	1 18	1 09½	1 32½	1 18½	1 74	2 50
Outside laborer	do								2 00
Inside mule-driver	do	2 48	1 75	1 40	1 90	2 25	2 25	2 25	2 25
Weighmaster	do	2 11½	1 92½	1 58½	1 96	2 30½	2 30½	2 30½	2 30½

Classes of employes.	Unit of payment.	DATES.							
		1872.	1871.	1870.	1860.	1868.	1867.	1866.	1865.
Superintendent	Month ..	\$208 33	\$208 33	\$208 33	\$200 00	\$187 50	\$208 33	\$100 07	\$100 07
Mining overseer, or pit boss	Day	3 07½	3 07½	2 88½	2 88½	2 88½	2 88½	3 07½	3 07½
Clerk	do	2 30½	2 30½	2 30½	2 30½	2 30½	2 30½	2 30½	2 11½
Miner on wages	Ton	65	65	65	65	65	65	65	75
Miner on wages	Day								
Inside laborer	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Outside laborer	do	2 00	2 00	2 00	2 00	1 80	1 75	1 50	1 75
Inside mule-driver	do	2 25	2 25	2 25	2 25	1 80	1 60	1 50	1 50
Weighmaster	do	2 30½	2 30½	2 00	2 00	2 30½	2 30½	1 02½	2 11½

REMARKS.—It is stated in this return that no over-time is made at this mine, the rules of the Knights of Labor organization forbidding it.

All allowances and privileges have been considered in making up the wages tables.

Payments are monthly, and uniformly in cash.

From 1864 to 1874, 10 hours a day was the rule for all classes; in 1875 a day's work was increased to 11 hours, and in 1880 decreased to 9 hours. The opinion has been expressed that the reduction from 11 to 9 hours has in no way contributed to the welfare of the mine, as idleness among miners is likely to create turbulence, intemperance, and thriftlessness.

While the works have run, almost without exception, 12 months a year, it is stated that there is a great deal of voluntary idleness among the miners. Regarding the rates given in the tabulation, it is stated that they are the actual earnings. "It must be borne in mind, however," writes the proprietor, "that these amounts were earned not by working every day. Among the miners and all labor connected with them, more especially than in any other department of industry we know of, there is an immense amount of idleness, and I think it fair to say that there are many men who work only enough to maintain themselves in a most precarious manner, and the whole of a force does not work more than 180 days in a year."

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Mining overseer, or pit boss..	Day	\$3 84- 4 80	\$2 88- 4 80	\$2 88- 3 20	\$2 88- 3 20	\$2 88- 3 20	Weighmaster	Day	\$2 80½	\$2 80½	\$2 80½	\$2 80½	\$1 92½
Miner on wages	do	2 50	2 00- 3 00	2 00	2 00	2 00	Miner	Ton	70- 80	50- 1 00	40- 00	40- 50	40- 50
Inside or outside laborer	do	1 75- 2 00	1 50- 2 50	1 50- 1 75	1 50- 1 75	1 50- 1 75	Minor	Yard ...	2 00- 2 50	2 00- 2 50	2 00	2 00	2 00
Inside or outside mule-driver..	do	1 75- 2 00	1 50- 2 50	1 50- 1 75	1 50- 1 75	1 50- 1 75							

REMARKS.—There have been some opportunities at this mine for extra earnings by working at night. For such work regular rates are paid, and the increase in wages has not been considered in making up the above table.

No allowances are given.

Miners provide their own tools, powder, and oil. They are obliged to expend about 1½ per cent. of their earnings for keeping tools in order, and about 5 cents, per ton of coal mined, for powder.

Payments have always been monthly and in cash.

Eight to 9 hours constitute a day's labor in mining work. The opinion is expressed here, as previously, that idleness among the workmen in this industry is conducive to dissipation and intemperance.

From 1876 to 1880 the mine was in operation an average of 11½ months a year, and in the census year 12 months. Strikes are given as the cause of the occasional idleness which has occurred.

During 1876 two months were lost because of the burning of a portion of the works during a strike. The demands for higher wages which give rise to these difficulties are most frequently made by miners and haulers.

There has been a decrease in the efficiency of labor arising from the fact that there are so many miners in the district, and the prices are so high that many men are satisfied to work only a third or half time, and the advantages of experience and diligence are lessened.

Mine locomotives were introduced in 1879, and have lessened the number of horses and haulers.

The men are generally healthy, though occasionally when working in damp rooms they suffer from rheumatism. The employers believe that, were miners in this section to exercise the care of their health which is common in other departments of skilled labor, they would be as healthy as workers in any trade.

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Clerk	Day											\$2 50
Miner on wages	do	\$2 25	\$1 80	\$1 60	\$1 80	\$1 80	\$2 25	\$2 25	\$2 80	\$3 00	\$2 80	2 80
Inside laborer	do	1 80	1 80	1 80	1 80	1 80	1 80	1 80	1 80	1 80	1 80	2 00
Outside laborer	do	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	2 75	3 00
Inside or outside mule-driver..	do	1 15	1 00	1 10	1 20	1 20	1 50	1 50	1 75	1 75	1 75	1 75

REMARKS.—Teamsters occasionally have opportunities for extra hauling, which would increase regular wages, and have not been included in the above rates.

Miners are obliged to pay out about 1 per cent. of their wages for powder, candles, sharpening picks, and keeping tools in repair.

Payments have always been every two weeks and in cash.

The hours of labor are nominally from 7 a. m. to 5 p. m., but miners seldom work so long, and all classes average about 8 hours a day. This custom has been unchanged since the opening of the mine.

The mine has been in operation, on an average, 10 months a year since 1856, demand being greater in winter than in summer.

Employes have no allowances or privileges.

Not more than 8 strikes have occurred in the history of this company, and those have been of short duration.

The selling price of coal for 1880 is given as 6 cents per bushel. The cost of coal, including mining, horse-feed, repairs on wagons, interest, etc., is 5 cents per bushel at the works. The relation of wages to this cost is about 80 per cent.

This mine is regarded as very healthful, having a good circulation of air, though, the operator remarks, "The liability of accidents peculiar to mines, falling of roof, explosions, etc., exposes the miner to greater peril than is incident to other kinds of labor."

COPPER-MINING.

The schedules tabulated in this industry were secured by the assistants of the special agent in charge of the statistics of mining. They are all from the Lake Superior region, and represent fairly well the rates of wages paid in that copper district for the years covered by the schedule.

No reference need be made to the explanatory statements in connection with the different tabulations, as they do not furnish sufficient data from which to draw any general conclusions as to this industry.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Phoenix Copper Company, Phoenix, Michigan.

Classes of employes.	Unit of payment.	DATES.									
		1881.	1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Miner	Day	\$1 02½	\$1 02½	\$1 78	\$1 53½	\$1 73	\$1 73	\$1 02½	\$2 80½	\$2 80½	\$2 50
Lander	do	1 01½	1 01½	1 46½	1 40½	1 53½	1 53½	1 01½	1 84½	2 23	2 11½
Trammer	do	1 01½	1 01½	1 46½	1 40½	1 40½	1 46½	1 53½	1 73	2 11½	2 00
Surface laborer	do	1 53½	1 53½	1 34½	1 34½	1 40½	1 50	1 53½	1 73	2 00	1 73
Blacksmith	do	2 50	2 88½	2 30½	2 30½	2 50	2 50	2 50	2 50	2 00½	2 88½
Engineer	do	1 73	1 73	1 78	1 73	2 00	2 00	2 19½	2 30½	2 50	2 50
Fireman	do	1 73	1 73	1 53½	1 53½	1 84½	1 73	1 02½	2 00	3 23	2 23
Boy in wash-house	do	57½	57½	57½	57½	01½	00½	78	77	77	00½
Carpenter	do	2 50	2 50	1 02½	2 30½	2 30½	2 30½	2 30½	2 00½	2 00½	2 30½
Machinist	do	2 11½	2 11½	2 11½	2 30½	2 30½	2 30½	2 30½	2 88½	3 23	3 23

REMARKS.—Most of the opportunities for over-time work at this mine are confined to mechanics, machinists, carpenters, and smiths. The extra time that these would average would be perhaps a day in each month per man, and has not been included in the above rates.

No allowances are given, and all deductions have been considered in the table.

Most of the men mine on contract at a given price per fathom of ground broken, and hence regulate the hours to suit themselves. The custom has been, however, for miners and all other classes under ground to work 8 hours a day; surface-workers, 10 hours.

Employés are paid in cash at the end of every month.

The mine runs continuously through the year, and strikes never occur.

There has been no increase in the efficiency of labor.

Patent ore-feeder, Evans' slime table, and Hodges' sand-mill have been introduced. In 1879 the use of a more powerful explosive under ground was adopted. The effects of these improvements has been a reduction of employés in proportion to output.

As a rule, mining is not considered dangerous or unhealthful; most of the accidents that occur are occasioned by the carelessness of the men themselves.

Central Mining Company, Sherman Township, Michigan.

Classes of employes.	Unit of payment.	DATES.				
		1880.	1870.	1878.	1877.	1876.
Miner	Day	\$2 18	\$1 81	\$1 75½	\$1 01½	\$1 97½
Surfaceman	do	1 02½	1 37	1 40½	1 55½	1 00
Stampman	do	1 78½	1 41½	1 53½	1 80½	1 80

REMARKS.—The rates in the above table have been computed on the actual earnings per month of 26 days.

There are no opportunities for extra earnings.

Payments are monthly.

The hours of labor for all classes have been 10 a day.

The mine is in operation 12 months a year, and strikes never occur.

No change has taken place in the efficiency of labor, and there has been no material improvement in appliances.

STATISTICS OF WAGES—COPPER-MINING.

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An establishment in Michigan.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Miner.....	Day....	\$1 57	\$1 44	.....	\$1 52½	\$1 00½	\$1 78	\$1 78½	\$2 42½
Engine-driver.....	do....	1 80	1 92½	.....	1 92½	1 92½	2 15½	2 80½	2 21½
Fireman.....	do....	.....	.....	.....	.....	1 49½	1 56½	1 74½	2 08½
Blacksmith.....	do....	2 50	2 50	.....	2 50	2 50	3 20½	3 20½	3 07½
Machinist.....	do....	3 00	.....	.....	.....	.....	2 50	2 80½	2 80½
Carpenter.....	do....	2 80½	2 09½	.....	2 60½	2 50	2 50	2 50	2 40½
Laborer, mine.....	do....	1 33½	1 28½	.....	1 41½	1 40½	1 36½	1 44½	1 78½
Laborer, surface.....	do....	1 47½	1 80½	.....	1 50½	1 47½	1 64½	1 66½	1 93

REMARKS.—Employes are not required to pay out any part of their wages for tools.

Payments have always been monthly and in cash.

The hours of labor are 10 a day for all classes, those in the mine working night and day in two gangs.

Operations of this mine are never suspended.

An establishment in Michigan.

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Superintendent.....	Day....	\$0 61½	\$8 01½	\$8 01½	\$0 41	\$4 80½	Miner.....	Day....	\$1 92½	\$1 92½	\$1 73	\$1 73	\$1 73
Captain.....	do....	6 73	8 84½	7 09½	5 77	3 84½	Teamster.....	do....	1 73	1 01½	1 53½	1 53½	1 53½
Machinist.....	do....	2 88½	2 50	2 50	2 88½	2 88½	Laborer.....	do....	1 53½	1 40½	1 40½	1 42½	1 42½
Blacksmith.....	do....	2 30½	2 30½	2 30½	2 30½	2 30½	Engine-driver.....	do....	1 92½	1 84½	1 73	1 73	1 73
Carpenter.....	do....	2 00	1 80½	1 80½	1 73	1 73	Fireman.....	do....	1 73	1 61½	1 53½	1 53½	1 53½
Mason.....	do....	3 00	3 00	3 00	3 00	2 10	Wood-chopper.....	do....	1 53½	1 46½	1 42½	1 38½	1 34½

REMARKS.—There are occasional opportunities for extra earnings from over-time at this mine, which would increase wages about 10 per cent., and have not been included in the above rates.

Some officers of the company are provided with free houses, fuel, and feed for stock; and fuel, low rent, pasturage, and garden plot are allowed to some subordinate employes. These would increase regular wages from 10 to 20 per cent., and have not been considered in calculating the earnings given in the table.

Employes, when working on contract, are sometimes required to pay out a part of their wages for tools, etc. The rates given are the average net earnings, these deductions having been made.

Payments are monthly, and wholly in cash or partly in merchandise, at the option of the employes.

Surfacemen work 10 hours a day, except Saturday, when they stop 2 hours earlier.

Underground men work 8 hours every day.

The mine runs 12 months a year. The number of men employed by the company varies according to the richness of the mine, amount of construction, price of copper, etc.

No strikes have occurred within the period for which the rates are given.

The market for copper is stated to be so fluctuating as to render a general statement of selling price impossible. The cost of labor varies with the richness of the mine. Labor constitutes about 83 per cent. of the cost of mining copper.

There has been a marked decrease in the efficiency of labor, owing to the removal of skilled hands to a more remunerative employment in other mining districts and the supplying of their places by green hands.

Many machines operated by compressed air, such as drills, etc., have been introduced, machine-drills having almost entirely superseded hand-drills. Various machinery has also been brought into use, the result of which has been to increase output and to reduce cost and the number of employes, though it has effected an increase in the earnings per man.

The trade is not considered unhealthful, nor are accidents more frequent than in other occupations where heavy labor is necessary. Danger is avoided by care on the part of employes.

IRON-MINING.

There are but six tabulations in connection with this industry, none of which are from the great centers of the iron-mining industry, viz: Lake Champlain, Lake Superior, and Missouri. The same remark, however, may be made in connection with this industry as with several of the preceding, that, as this investigation was chiefly into the wages in manufacturing industries, but little attention was paid to securing rates in other branches of work.

From other sources, however, I have been able to ascertain the rates of wages paid in two of the districts mentioned above, and also in New Jersey, in the year 1882. These rates are lower than those paid in 1880, but it is deemed best to insert them here, in order that there may be some basis of comparison between the rates in the schedules rendered and those in the great centers of the iron-ore industry.

The following tables give the rates of wages for the different classes of labor, and the average rates of all classes, at several mines in the Lake Superior district. The first table is for the year ending April 30, 1883, and the second for the month of November, 1883. These statements include the mining of both the hard and soft ore in open pits and underground work. All of the work is done by contract so far as possible, and the earnings represent the actual earnings of the men after making all deductions for tools, explosives, etc.:

Table showing rates of wages in iron-mining in Lake Superior district for the year ending April 30, 1883.

Kind of labor.	Number of days worked.	Average wages per day.	Kind of labor.	Number of days worked.	Average wages per day.	Kind of labor.	Number of days worked.	Average wages per day.
Drillers:			Laborers—Continued.			Machinists.....	2,727	\$2 43 $\frac{1}{2}$
A mines.....	22,141	\$2 44 $\frac{1}{2}$	C mines.....	408	\$1 00 $\frac{1}{2}$	Engineers.....	1,480 $\frac{1}{2}$	1 00 $\frac{1}{2}$
B mines.....	10,500	2 42 $\frac{1}{2}$	Other labor:			Firemen.....	2,248 $\frac{1}{2}$	1 70 $\frac{1}{2}$
C mines.....	3,700 $\frac{1}{2}$	2 53 $\frac{1}{2}$	A mines.....	8,210 $\frac{1}{2}$	2 15 $\frac{1}{2}$	Brakesmen.....	2,080 $\frac{1}{2}$	1 70 $\frac{1}{2}$
Trammers:			B mines.....	5,038 $\frac{1}{2}$	3 15 $\frac{1}{2}$	Pumpmen.....	1,825 $\frac{1}{2}$	2 32 $\frac{1}{2}$
A mines.....	8,020	2 00 $\frac{1}{2}$	C mines.....	2,184	2 04 $\frac{1}{2}$	Timbering.....	8,470	2 07 $\frac{1}{2}$
B mines.....	0,202 $\frac{1}{2}$	2 07	Barmen.....	054	1 71 $\frac{1}{2}$	Diamond-drill.....	1,877	2 23
C mines.....	1,440 $\frac{1}{2}$	1 07 $\frac{1}{2}$	Teamsters.....	2,671	1 06 $\frac{1}{2}$	Exploring.....	1,022 $\frac{1}{2}$	1 08 $\frac{1}{2}$
Laborers:			Blacksmiths.....	1,200 $\frac{1}{2}$	2 01 $\frac{1}{2}$	All other labor.....	18,070	1 93
A mines.....	1,027 $\frac{1}{2}$	1 02 $\frac{1}{2}$	Blacksmiths' helpers.....	1,220	1 02	Breaking, sorting, and load- ing ore.....	5,484 $\frac{1}{2}$	2 35 $\frac{1}{2}$
B mines.....	1,270	1 03 $\frac{1}{2}$	Carpenters.....	8,040 $\frac{1}{2}$	2 18 $\frac{1}{2}$			

Average of all labor for the year ending April 30, 1883.

Kind of labor.	Number of days worked.	Average wages per day.
A mines.....	40,304 $\frac{1}{2}$	\$2 27 $\frac{1}{2}$
B mines.....	28,010 $\frac{1}{2}$	2 22 $\frac{1}{2}$
All other mines.....	25,120 $\frac{1}{2}$	2 42 $\frac{1}{2}$
Total mining force.....	89,041 $\frac{1}{2}$	2 30 $\frac{1}{2}$
All other labor at mine.....	02,248 $\frac{1}{2}$	2 00 $\frac{1}{2}$
Total labor at mine.....	151,285	2 20 $\frac{1}{2}$
Common labor.....	1 50 $\frac{1}{2}$

STATISTICS OF WAGES—IRON-MINING.

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Table showing rates of wages for the month of November, 1883.

Kind of labor.	Number of men working.	Total number of days worked.	Average wages per day.	Kind of labor.	Number of men working.	Number of days worked.	Average wages per day.	Kind of labor.	Number of men working.	Number of days worked.	Average wages per day.
Miners, B mines	12	123½	\$2 20	Laborers—Continued.				Machinists	9	232½	\$4 45
Hand-drillers, A mines.	6	120	2 30	B mines	3	74½	\$1 72	Engineers	5	140½	2 02
Trammers:				Subcontracts, A mines.	36	807	2 03	Firemen	4	103½	1 77
A mines	24	613½	2 10	Other labor:				Brakesmen	8	200	1 75
B mines	16	402½	1 95	A mines	20	648½	2 03	Pumpmen	5	180½	2 16
D mines		24½	1 75	B mines	10	254	1 92	Timbering	3	44½	2 07
P. D. runners:				D mines		60½	1 03	D drill	5	115	2 19
A mines	12	253½	2 28	Mine sinking and rais-		227	2 38	Side tracks		170½	1 61
B mines	10	230½	2 30	ing, D mines.				Sorting ore	2	139½	1 36
D mines		16	2 35	Breaking, sorting, and		105	2 52	All other labor	55	1,407½	1 97
P. D. helpers:				loading ore from				Company force	121	8,439½	1 90
A mines	12	254½	1 89	stock piles.				Total pay-roll ..	338	9,088½	2 10
B mines	8	181½	1 89	Barnmen	1	27½	1 92	E mine	87	2,289½	1 90
D mines		16	1 85	Teamsters	7	184½	1 63	Total of all labor..	420	11,325½	2 08
Laborers:				Blacksmiths	4	98½	2 60				
A mines	12	326	1 72	Blacksmiths' helpers	4	98½	1 58				
				Carpenters	9	23½	2 20				

Hours of labor.—All men work 10 hours a day.

Other labor.—In addition to the above, there are two broken-down men whom the company considers itself bound to take care of, who have charge of the "changing around", at \$1 40 a day. There are also three boys: two paid \$1 each a day, and one \$1 25.

The following statement gives the rate of wages at the mines of one of the largest ore-producing companies in the Lake Superior region for the month of October, 1883. At part of these mines the difficulties incident to mining in Lake Superior are fully experienced. Part of the mining is under ground by shafts and part in open pits. No mine, however, is more intelligently and skillfully operated.

Table showing rates of wages for the month of October, 1883.

Kind of labor.	Total number of employes of each class.	Total number of days worked by each class.	Average wages per day.	Kind of labor.	Total number of employes of each class.	Number of days worked.	Average wages per day.
Mining captains	3	81	\$4 32	Blacksmiths	12	329	\$2 02
Mining engineer	1	27	2 40	Masons	9	244	1 07
Pit bosses	10	270	2 50	Painters	2	43	2 42
Miners	62	1,668	2 15	Chief engineer	1	27	4 62
Trammers	22	585	1 96	Engineers and firemen	23	616	1 90
Hand-drillers	27	736	2 03	Machine-shop	9	244	1 07
Machine-drillers and seven	41	1,109	2 08	Boiler-shop	2	56	1 87
helpers.				Pumpmen	6	180	2 00
Timbermen	10	264	2 11	Explorers	1	83	3 40
Skipmen	6	161	1 75	Surface boss	1	27	2 25
Barnmen	4	121	1 83	Loading ore from stock piles	8	220	2 45
Teamsters	11	308	1 68	General labor on surface, on	77	2,055	1 63
Ore-weigher	1	227	1 45	trestle-works, and in dry-			
Trackmen	5	185	1 85	houses.			
Carpenters	10	283	2 22		364	9,844	2 02½

The above includes the wages of all boys as well as of men. So few boys are employed that they are not reported as a separate class. Total force employed, 364 men.

Average wages per day per man, \$2 02½.

Add to the force above say one general agent, one superintendent, and one bookkeeper and paymaster.

STATISTICS OF WAGES—IRON-MINING.

The following statement shows the average rates of wages paid for the years 1882 and 1883 to the different classes of labor, together with the number of men of each class employed, at one of the important mines in the state of New York. The statement is for 300 working days in each year:

Table showing the rates of wages in mining iron ore in the state of New York for the calendar years 1882 and 1883.

Kind of labor.	1883.		1882.	
	Average number on pay-roll.	Average wages per day.	Average number on pay-roll.	Average wages per day.
Pit foremen	4	\$2 23	0	\$2 33
Miners	3	1 75	0	1 82
Pitmen	80	1 75	147	1 52
Machine drillmen	7	1 75	11	1 83
Assistant drillmen	7	1 50	11	1 57
Drill-carrier	1	1 25	2	2 27
Drill-sharpeners	2	1 85	2	2 07
Loaders	12	1 81	17	1 42
Superintendent and clerk	2	2 00	2	2 00
Engineers and machinists	4	2 16	5	2 11
Firemen	3	1 65	3	1 73
Brakemen	4	1 40	5	1 48
Carpenters	4	1 73	4	1 84
Blacksmith	1	2 50	1	2 50
Blacksmith's helper	1	1 40	2	1 40
Bankmen	18	1 44	27	1 47
Watchman	1	1 65	1	1 72
Mason and painter	1	.....	1	2 20
Total	155	.....	252	.....

Production per man per day for 1883	tons..	2.52
Production per man per day for 1882	do..	2.82
Production for each inside man per day for 1883	do..	3.50
Production for each inside man per day for 1882	do..	3.60
Average wages per man per day, 1883		\$1 53.7 ₆
Average wages per man per day, 1882		\$1 58.4 ₆

The miners have charge of the explosives, and charge and fire the holes. Pitmen "block-hole" the large lumps, "trim down" the walls, and "sledge up" the ore to size for handling.

A few boys are employed as drill- and water-carriers; these are paid \$1 a day.

Hours of labor.—The mine is worked on the single-shift system, 10 hours to a shift.

The following statements give the results of working at three magnetic mines in New Jersey, operated by the same company:

MINE A.

Number of men employed above and below ground..... 126

Miners.

Output per man per shift (including miners and their laborers only)	cwt..	18
Hours of labor (large stopes work 3 shifts 8 hours; small stopes, 10 hours)	hours..	8 and 10
Rate per ton for mining		\$1 55
Cost per day for power (including coal, oil, waste, leather, packing, water, hemp, etc.)		\$20 00
Cost per day for furnishing light under ground (including candles and oil)		\$3 75
Miners' net average earnings per shift, last six months, 1883		\$1 33

Classes of labor.	Average daily earnings.	Number of men employed.
Miners, beginning January 1, 1884	\$1 10	58
Laborers, beginning January 1, 1884	1 10	17
Timber- and track-men, January 1, 1884	1 35	7
Timber- and track-men's helpers (boys)	65	7
Engineer, January 1, 1884	1 10	1
Engineer and mine-carpenter	1 85	1
Blacksmiths	1 35	4
Blacksmiths' helpers (boys)	65	2
Cobbers	1 10	5
Landers under ground	1 10	2
Bucket-fillers	1 10	4
Car-fillers	1 10	8
Pump-runners (boys)	60	2
Weighmaster	1 00	1
Levelling cars (boy)	75	1
Teamster and team	3 25	7

MINE B.

Number of men employed above and below ground	number..	53
Output per shift per man	gross tons..	1.08
Amount of ore mined per day during January, 1884	tons..	74.07
Hours of labor per day	hours..	10
Cost of candles, powder, etc., per ton of ore		\$0 13
Cost of labor above and below ground per ton of ore, January, 1884		\$0 89½

Classes of labor.	Daily earnings January, 1884.	Number of men employed.
Miners	\$1 10	15
Drilling-machine men	1 32	4
Helpers	1 10	4
Laborers	1 10	8
Landers	1 10	6
Pumpman	1 10	1
Pumpman	1 32	1
Engineers	1 32	2
Blacksmiths	1 10	2
Blacksmith's helper	1 10	1
Blacksmith's helper	97	1
Chargemen	1 41	3
Chargemen	1 32	3
Timbermen	1 32	3
Man and horse	1 70	
Boy	73	1

MINE C.

Number of men employed above and below ground	number..	85
Output per shift per man	cwt..	17
Amount of iron ore mined per day during January, 1884	tons..	72
Hours of labor (8 hours below, 10 above ground)	hours..	8 to 10
Cost of candles, powder, etc., per ton of ore		\$0 15
Cost of all labor above ground		\$0 23
Cost per ton for mining and bringing to surface		\$1 08
Net average earnings per day		\$95 80

Classes of labor.	Daily earnings January, 1884.	Number of men employed.
Miners	\$1 10	52
Laborers	1 10	8
Chargemen	1 40	2
Pumpmen	1 10	2
Blacksmiths	1 10	2
Blacksmith	1 32	1
Blacksmith's helper (boy)	53	1
Engineers	1 10	2
Boiler-tenders	1 10	2
Carpenter	1 45	1
Cobblers and loaders	1 12½	4
Landers	1 10	2
Timbermen	1 35	4

STATISTICS OF WAGES—IRON-MINING.

Wages in Great Britain.—For the purpose of comparison with our own tables, the subjoined rates of wages for mining iron ore in North Staffordshire district, England, are given. These are from the *Miscellaneous Statistics of the United Kingdom*, Part XI:

Proportion of persons employed per 100 hands.	Description of occupations.	Employés.	Rates of wages per day.	Hours of labor per week.	Proportion of persons employed per 100 hands.	Description of occupations.	Employés.	Rates of wages per day.	Hours of labor per week.
	NORTH STAFFORDSHIRE DISTRICT.					NORTH STAFFORDSHIRE DISTRICT—cont'd.			
1	Overmen	Men	\$1 68	54	3	Drivers	Lads	\$0 48	54
1	Firemen	Men	1 09	54	1	Trappers	Boys	18	54
26	Colliers	Men	97	54	1	Furnacemen	Men	60	84
1	Tunnelers	Men	\$0 85 to 97	54	1	Lamp-keepers	{Men	93}	84
2	Shaftmen	Men	85 to 97	54			{Lads and boys	48}	
8	Airwaymen	{Men	87 }	54	1	Horse-keepers	{Men	97}	54
		{Lads and boys	30 to 60 }				{Lads	64}	
9	Banksmen	Men	81 to 97	54	3	Cartmen	Men	77	54
1	Weighmen	Men	97	54	4	Smiths	Men	97	58
8	Ruckers	Men	84 ⁹	54	1	Smiths' foremen	Men	1 63	58
8	Loaders	Men	77	54	3	Wagonwrights	Men	1 00	58
4	Timberers	Men	87 to 1 09	54	3	Enginemen	Men	1 09	84
4	Hand-putters	Lads	58	54	3	Stokers	Men	85	84
3	Pony-putters	Lads	56	54	100				

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Shelby Iron Company, Shelby Iron Works, Alabama.

Classes of employés.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Foreman	Day	\$2 00				\$2 00	\$2 50			\$2 50		\$3 00
Boss	do		\$1 50	\$1 50	\$1 50	2 00						
Miner	do	90	80	80	90	80				1 00		
Engineer	do	2 50	2 00	2 00	1 50	1 50				2 00		
Brakeman	do	1 00	1 00	80	90	90				1 00		
Fireman	do	1 25	1 00	90	90	80				1 00		
Chute-hand	do	1 25	1 20	1 00	1 00	1 00	1 00			1 50		1 35
Machinist	do	3 00	3 00	3 00	3 00	3 50				3 50		
Blacksmith	do	3 00	3 00	3 00	3 00	2 75				3 00		
Teamster	do	1 00	1 00	1 00	1 00	1 00				1 87		
Cart-boy	do	50	50	40	40	50				50		60
Laborer	do	90	80	80	90	90	90			1 00		1 25

REMARKS.—At this mine over-time has occasionally been made on Sundays, when over-time of chute-hands and drivers has been necessary to prevent the stopping of the blast-furnace, supplied from these mines, from lack of ore. These would not increase the wages given above.

Employés are allowed free house-rent and land for gardens, which would increase wages about 5 per cent., and have not been taken into account in the table.

No expense is incurred by employés for tools, etc.

Payments have been monthly, except during the panic of 1873, when there was no regular pay-day.

All cash is paid if preferred, though the company has a store at which employés can obtain what they desire, and have the amount deducted from their wages at the close of the month.

All classes work 10 hours a day.

Works run 12 months a year.

No strikes or lockouts have ever occurred.

Most of the product is used in the blast-furnaces of the owners.

The price of what ore was sold in 1880 was \$2 50 per ton, delivered at a point on the railroad 6 miles from the mine. The cost of labor per ton is 60 cents.

There has been an increase in the efficiency of labor, the company stating that, after 10 years of exact and literal fulfillments of all contracts, they find on June 30, 1880, that they have a class of common labor above the average in efficiency.

An ore-breaker has been introduced, which has resulted in a much better preparation of hematite ore for the furnace, but has not affected wages.

It is stated that the raising of iron ore at this establishment is not dangerous, as they work "open breast". Occasionally, however, the bank caves in at the top, and from this cause one man has been killed and two or three hurt through their own carelessness.

STATISTICS OF WAGES—IRON-MINING.

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Menominee Mining Company, Breitung, Michigan.

Classes of employés.	Unit of payment.	DATES.		Classes of employés.	Unit of payment.	DATES.	
		1880.	1879.			1880.	1879.
Foreman.....	Day	\$0 00	\$0 00	Chute-hand.....	Day	\$1 50	\$1 40
Boss	do	2 55	2 55	Machinist	do	2 02	2 02
Miner	do	2 11	2 11	Blacksmith	do	2 05	2 05
Engineer.....	do	2 02	2 02	Teamster	do	1 38	1 38
Brakeman	do	1 42	1 42	Cart-boy.....	do	1 00	1 00
Fireman	do	1 42	1 42	Laborer	do	1 01	1 01

REMARKS.—Employés are not obliged to pay out any part of their wages for tools, etc.

Payments are monthly, and in cash if preferred. The firm keeps a store, upon which employés can obtain orders if they wish.

All classes work 10 hours a day, and the mine has been in operation constantly since its opening in August, 1878.

The selling price of iron ore per ton in 1880 was \$5 00.

N. Gridley & Son, Amenia, New York.

Classes of employés.	Unit of payment.	DATES.												
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.*	1869.	1868.
Boss.....	Day													
Laborer.....	do	\$1 25	\$1 00	\$1 00	\$1 00	\$1 00	\$1 15	\$1 30	\$1 05	\$1 57	\$1 01	\$1 04	\$1 03	\$1 08

Classes of employés.	Unit of payment.	DATES.												
		1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.
Boss.....	Day			\$1 77	\$1 34					\$1 11	\$1 11		\$1 11	\$1 11
Laborer.....	do	\$1 63	\$1 57	1 53	1 15	\$0 94	\$0 92	\$0 92	\$0 90	92	00	\$0 88	1 00	97

Classes of employés.	Unit of payment.	DATES.												
		1854.	1853.	1852.	1851.	1850.	1849.	1848.	1847.	1846.	1845.	1844.	1843.	1842.
Boss.....	Day	\$1 11												
Laborer.....	do	06	\$0 86	\$0 80	\$0 84	\$0 76		\$0 84	\$0 77				\$0 65	

NOTE.—It is impossible to furnish figures for labor for all the years, because ore was dug by the ton for the following years: 1836, 1838, 1839, 1840, 1842, 1843, 1844, 1845, and from 1847 to 1853.

REMARKS.—Employés sometimes receive free board, the amount of which has been considered in computing the earnings. The superintendent receives house, barn, and cow-keeping free, which would

increase his salary about \$150 a year. The rates of board during the years in which it was furnished by the company are given in the subjoined table:

Year.	Rate per week.	Year.	Rate per week.	Year.	Rate per week.	Year.	Rate per week.	Year.	Rate per month.	Year.	Rate per month.
1832	\$1 50	1838	\$2 00	1843	\$1 50 and \$1 75	1848	\$1 75 and \$2 00	1854	\$10 00 and \$11 00	1862	\$10 00
1833	1 75	1839	2 00	1844	1 50	1850	2 00	1856	11 00	1863	\$10 00 and 12 00
1835	1 50	1840	\$2 00 and 2 25	1845	1 50	1851	2 00	1857	9 00	1864	12 00 and 17 00
1836	\$1 50 and 1 75	1841	1 75 and 2 00	1846	1 37 and 1 75	1852	2 00	1858	9 00 and 12 00	1865	15 00 and 17 00
1837	1 75 and 2 00	1842	1 75	1847	1 50 and 1 75	1853	2 25	1859	10 00 and 11 00	1866	18 00

No deductions are required for tools.

Payments, which are wholly in cash, have been monthly since 1863. Previously to that date the men were paid on application, settlements being made December 1 and April 1.

During 5 months of the year the hours of labor are 9 a day, and during the remaining 7 months 11 a day.

The mine was in constant operation from 1866 to 1875, since which

time it has been idle during the 6 months of cold weather, on account of low prices and limited demand for iron.

No statement is made in the return made by this company regarding selling price, as most of the ore mined is used by the company's own furnace.

Some labor-saving machinery has been introduced for washing ore.

STATISTICS OF WAGES—IRON-MINING.

Bethlehem Iron Company, Alburdis, Pennsylvania.

[MAGNETIC MINES.]

Classes of employes.	Unit of payment.	DATES.		Classes of employes.	Unit of payment.	DATES.	
		1880.	1879.			1880.	1879.
Foreman.....	Day	\$1 40	\$1 40	Teamster.....	Day.....	\$1 10	\$1 10
Miner.....	do	1 15	1 15	Cart-boy.....	do	35	35
Engineer.....	do	1 00	1 00	Laborer.....	do	1 00	1 00
Blacksmith.....	do	1 80	1 75				

Bethlehem Iron Company, Alburdis, Pennsylvania.

[HEMATITE MINES.]

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Foreman.....	Day		\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$2 00	\$2 00	\$1 75
Boss.....	do		1 50	1 50	1 50	1 50	1 50	1 50	2 00	2 00	1 75
Miner.....	do		85	85	85	85	1 10	1 25	1 75	1 55	1 40
Engineer.....	do		1 00	1 00	1 00	1 00	1 00	1 00	2 00	2 00	1 50
Teamster.....	do		1 00	1 00	1 00	1 00	1 10	1 25	1 75	1 65	1 45
Cart-boy.....	do		35	35	35	35	35	50	50	50	50
Laborer.....	do		75	75	75	75	1 00	1 10	1 00	1 50	1 35

REMARKS.—These mines, though owned and worked in the interest of the Bethlehem Iron Company, are worked by contract by other parties.

It is stated that employes are under no expense for tools.

All classes work 10 hours a day.

Payments are monthly and in cash.

Thomas Iron Company, Hokendauqua, Pennsylvania.

Classes of employes.	Unit of payment.	DATES.											
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Miner.....	Day	\$0 80	\$0 80	\$0 75	\$0 75		\$1 00	\$1 10	\$1 45	\$1 50	\$1 25	\$1 35	\$1 50
Engineer.....	do	1 00	1 00	90	90		1 15	1 25	1 75	1 87	1 50	1 60	1 75

Classes of employes.	Unit of payment.	DATES.											
		1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.
Miner.....	Day	\$1 50	\$1 50	\$1 50	\$1 50	\$1 00	\$1 00	\$1 00		\$0 80	\$0 75	\$0 65	\$0 65
Engineer.....	do	1 75	1 60	1 60	1 60	1 75	1 15	1 15		1 00	85	75	75

REMARKS.—Some opportunities for extra earnings from piece and holiday work are afforded by this firm, which have not been considered in the rates given, and would increase them about 15 per cent.

Very low rent is charged to those employes living in the company's houses, and some other slight privileges are granted which have not been taken into account in the above figures.

No deductions are made for tools or supplies.

Payments have been monthly and in cash since 1860.

All classes work 11 hours in summer and from 9 to 10 in winter.

No strikes or lockouts have occurred.

This company also uses the ore mined in its own furnace, and no selling price is given.

An increased efficiency of labor has been remarked, which is attributed by the proprietor to the fact that since wages are not so high men spend less money for whisky, and are consequently more regular in their habits and at their work.

SILVER-MINING.

The two schedules tabulated under this head were secured through the kindness of the special agent in charge of the statistics of the mining industry. They are of but little interest other than showing the rates of wages for the years reported upon. During these years, it will be noted, there have been no changes in the rates of wages at these works.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Tiptop Mining Company, Tiptop, Arizona.

Classes of employes.	Unit of payment.	DATES.				Classes of employes.	Unit of payment.	DATES.			
		1889.	1879.	1878.	1877.			1880.	1879.	1878.	1877.
Miner.....	Day	\$4 00	\$4 00	\$4 00	\$4 00	Roaster.....	Day	\$5 00	\$5 00	\$5 00	\$5 00
Ore-sorter .....	..do	3 00	4 00	4 00	4 00	Helper.....	..do	4 00	4 00	4 00	4 00
Mine-engineer .....	..do	4 50	4 50	4 50	4 50	Rock-breaker.....	..do	4 00	4 00	4 00	4 00
Mill-engineer .....	..do	5 00	5 00	5 00	5 00	Batteryman.....	..do	4 50	4 50	4 50	4 50
Foreman .....	..do	5 50	5 50	5 50	5 50	Retorter .....	..do	4 00	4 00	4 00	4 00
Blacksmith .....	..do	5 00	5 00	5 00	5 00	Millwright.....	..do	6 00	6 00	6 00	6 00
Amalgamator.....	..do	5 00	5 00	5 00	5 00						

REMARKS.—Monthly payments in cash have always been the rule at these works.

Miners work from 8 to 10 hours a day; ore-sorters 10 hours; engineers 8 hours, and amalgamators, roasters, and batteryman 12 hours.

The mine is in operation 12 months a year, night and day.

There has been an increase in the efficiency of labor, arising from the fact that a better and more experienced class of miners has begun to go to Arizona.

No labor-saving machinery has been introduced.

Ontario Silver Mining Company, Park City, Utah.

Classes of employes.	Unit of payment.	DATES.				Classes of employes.	Unit of payment.	DATES.			
		1880.	1879.	1878.	1877.			1880.	1879.	1878.	1877.
Amalgamator.....	Day	\$4 50	\$4 50	\$4 50	\$4 50	Blacksmith.....	Day	\$5 00	\$5 00	\$5 00	\$5 00
Furnaceman.....	..do	4 00	4 00	4 00	4 00	Battery-feeder.....	..do	4 00	4 00	4 00	4 00
Engineer .....	..do	4 00	4 00	4 00	4 00	Miner .....	..do	3 00- 3 50	3 00- 3 50	3 00- 4 00	3 00- 4 00
Fireman .....	..do	3 50	3 50	3 50	3 50	Laborer .....	..do	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00
Carpenter .....	..do	4 00	4 00	4 00	4 00						

REMARKS.—Mechanics have some opportunities for working over-time in making repairs. These would increase the regular wages but slightly, and have not been considered in making up the above table.

Employes when unmarried are furnished with board by the company upon the payment of \$1 a day. For this consideration they also receive fuel, light, and room, and hospital accommodations in case of accident, free.

Employes are not required to furnish tools, or any materials used in their work.

Payments, which are wholly in cash, are monthly.

Miners work 8 to 10 hours a day; furnacemen and ore-dryers 8 hours; amalgamators, engineers, and firemen 12 hours. It is stated here, as in other returns from the mining industry, that short hours offer temptations to intemperance, which is prevalent among the men when not at work.

The mine is operated throughout the year.

No general strike has occurred at this mine. Occasionally a few men have struck, but their places have been readily supplied.

An estimate is made regarding cost of labor for the census year, which places it a little over half the total cost of product.

There has been no change in the efficiency of labor, and no labor-saving machinery has been introduced.

The chief dangers to health in the mines are liability to take cold, which can be avoided with care, and the chances of accidents. In the mill amalgamators are subject to salivation by inhaling fumes of mercury. Furnacemen suffer from the effects of chlorine gas from the decomposition of the salt used in washing the ore, and ore-diggers and battery-feeders from the fire-dust in the air. In these departments of the mill the men wear sponges over their mouths and nostrils. The statement is made that these injurious occupations are incident to the business of milling silver ore, and not peculiar to this mill, which is exceptionally well ventilated and appointed.

STONE QUARRYING AND WORKING.

This classification includes the wages paid in connection with the quarrying, cutting, and working of stone of various kinds.

In addition to the schedules tabulated, several were received in regard to other branches of quarrying that have not been tabulated, but contain some information of interest.

The following statement gives the rates of wages paid in connection with the preparation of slate at Bangor, Pennsylvania :

Classes of employés.	Unit of payment.	DATES.															
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1860.	1868.	1867.	1866.	1865.
Slate mechanics.....	Day ...	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$3 50	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00
Laborers .....	...do ...	1 00	90	90	90	90	90	90	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Carpenters .....	...do ...	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 25	2 25	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Blacksmiths.....	...do ..	1 50	1 25	1 25	1 25	1 25	1 25	1 25	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00

A return from the Wilson & Hughes Stone Company, of Cleveland, Ohio, gives the rates of wages of laborers at their grindstone quarries per day as follows:

1880.....	\$1 05	1860.....	\$1 25
1875.....	2 00	1855.....	1 25
1870.....	2 25	1850.....	1 00
1865.....	2 00		

In explanation of these figures the return states that wages have averaged as above. In 1850 from 75 cents to \$1 a day was paid. These rates were advanced about 25 cents a day until about the time of the Chicago fire, when wages still further advanced to \$2 and \$2 50 per day. Regarding grindstones, it is stated that the average cost of manufacture is from \$6 to \$8 per ton; the selling price from \$10 to \$15 per ton. The average cost of quarrying stone per cubic foot is from 22 to 28 cents; average selling price, 30 to 60 cents. The average cost of sawing stone is 10 cents per superficial foot.

In the schedule from La Fayette, Indiana, the following statement regarding wages of stone-cutters, sawyers, and drillers per day are given :

Classes of employes.	Unit of payment.	DATES.									
		1880.	1878.	1876.	1874.	1872.	1870.	1868.	1866.	1864.	1862.
Stone-cutters.....	Day ...	\$2 25	\$3 00	\$3 00	\$3 00	\$3 50	\$4 00	\$4 00	\$3 50	\$2 50	\$2 00
Sawyers and drillers.....	do ...	1 50	1 75	1 75	1 75	2 00	2 00	2 00	1 75	1 25	1 00

The only supplemental statements that need any comment are those that relate to healthfulness and accident. There is a remarkable difference of opinion on this subject, most proprietors claiming that the industry is healthful and not much subject to accident, while some state that there is a great liability to accidents, and that the stone-cutting portion of the industry is especially unhealthful, the workmen being liable to consumption from inhaling the stone-dust.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Ayer & McDonald, Waterbury, Connecticut.

Classes of employes.	Unit of payment	DATES.										
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.
Quarryman	Day	\$1 50	\$1 25	.....	\$1 15	\$1 15	\$1 25	.....	\$1 75	\$2 00	\$2 25	\$2 25
Teamster	do	1 40	.....	.....	.....	1 07½	.....	.....	.....	.....	.....	1 96
Laborer	do	1 40	1 25	.....	1 15	1 10	1 00	.....	.....	1 75- 2 10	1 75- 2 10	1 75- 2 10

REMARKS.—The members of this firm are contractors for excavation and stone work, as well as quarrymen.

There are some opportunities for over-time work, for which regular rates are paid; such extra earnings have not been included in the wages given.

Some allowances and privileges are granted to employes to assist them in building homes and improving their land.

No deductions are made at this establishment for tools or necessary equipments.

Payments are monthly and in cash.

Though the hours of labor are nominally 10, sometimes in the fall and winter insufficient light renders it impossible to work more than 9 hours.

The regularity of employment is chiefly dependent upon the weather, severe cold or deep snow causing stoppage.

Strikes among the employes of this company are frequent. The

men are chiefly foreigners, somewhat turbulent, and of roving and dissipated habits.

Labor cost per cubic yard is given as 15 cents for earth or sand excavations; hard-pan, 40 cents; rock, from \$1 to \$2; for rough masonry, such as bank walls and culverts, from \$3 to \$4 is paid; fine bridge and first-class masonry, from \$10 to \$22.

There has been a decrease in the efficiency of labor within the past 10 years, which is attributed to relaxed discipline and the influx of foreign laborers, who are largely addicted to intemperance.

Steam shovels, drills, and derricks have been introduced, which have effected a large decrease in the number of employes in proportion to work done, and also in cost of labor.

Though large quantities of highly explosive materials are used, with care accidents may be avoided, as is proved by the fact that in the last 10 years not one man in the employ of this firm has been killed, and but few have been injured.

Grafton Quarry Company, Grafton, Illinois

Classes of employes.	Unit of payment.	DATES.					
		1880.	1870.	1878.	1877.	1870.	1875.
Quarryman	Day	\$1 75	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50
Laborer	do	1 60	1 50	1 50	1 50	1 50	1 50

REMARKS.—This firm quarries rough or undressed stone.

Payments are monthly and in cash. To those desiring to anticipate their earnings orders are given on stores in which the company has no interest.

Men work 10 hours a day except during the short days of winter, when they work 9 hours, receiving therefor nine-tenths of a day's wages.

Employment is regular throughout the year except about 6 weeks in winter, when quarrying is interfered with by the weather, and when building, which governs the demand, ceases.

A strike lasting 1 day occurred in 1880. The cause was a demand for an advance in wages of 25 cents a day, which was granted to a portion of the men.

The following statement is given regarding price of product, cost of labor, and percentage of wages to cost:

Year.	SELLING PRICE.			Average cost of total product.	Percentage of wages to cost of total product.
	Riprap stone.	Rubble stone.	Large stone.		
1875.....	Cubic yard. \$0 30	Cubic yard. \$0 75	Cubic yard. \$2 00	Cubic yard. \$1 50	Per cent. 90
1880.....	50	1 00	3 00	2 00	80

There has been no change in the efficiency of labor.

Derricks and travelers on wires have been introduced. These have effected 50 per cent. reduction in the amount of labor required, and have rendered possible the handling of stone of sizes otherwise unmanageable.

The trade is not considered dangerous or unhealthful.

STATISTICS OF WAGES—STONE QUARRYING AND WORKING.

P. Conklin & Co., North Vernon, Indiana.

Classes of employes.	Unit of payment.	DATES.		Classes of employes.	Unit of payment.	DATES.	
		1880.	1870.			1880.	1870.
Stone-cutter	Day	\$2 50	\$2 00	Shoveler.....	Day	\$1 10	\$1 00
Mason .....	...do	2 50	2 00	Teamster.....	...do	2 50	2 00
Driller.....	...do	1 25	1 15				

REMARKS.—It has been the practice of this company to deduct 10 cents a day from the wages of the men of a class when one of their number is hurt at his work, for the benefit of the injured man's family. Such occasions, however, do not often occur.

Payments are partly in merchandise and partly in cash, on the 15th of each month.

The quarry is operated from 8 to 9 months a year, the cause of idleness being bad weather in the winter.

All classes work 10 hours a day.

No strikes have occurred.

The selling price of bridge stone is given as \$2 in 1879, and \$2 25 in 1880.

No improvement has taken place in the efficiency of labor, and no labor-saving machinery has been introduced.

The trade is considered healthful, and the only danger is from falling stone.

Terre Haute Stone Works Company, Terre Haute, Indiana.

Classes of employes.	Unit of payment.	DATES.											
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Engineer	Day	\$1 75	\$1 75	\$2 00	\$2 00	\$2 25	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50
Sawyer.....	...do	1 50	1 50	1 25	1 50	1 50	1 75	2 00	2 00	2 00	2 00	2 00	2 00
Stone-cutter.....	...do	2 50	2 25	2 25	2 50	3 00	3 50	3 50	4 00	4 00	4 00	4 00	4 00
Teamster.....	...do	3 00	2 50	2 50	2 50	2 50	3 00	3 00	4 00	4 00	4 00	4 00	4 00
Laborer.....	...do	1 25	1 25	1 25	1 25	1 25	1 50	1 50	2 00	2 00	2 00	2 00	2 00

REMARKS.—The product of this establishment is sawed and cut stone for buildings.

There are no opportunities for over-time worthy of consideration, and no allowances are given.

Stone-cutters pay out for tools about 1 per cent. of the wages in the above table.

Employés are paid every Saturday night, and wholly in cash.

All classes work 10 hours a day.

Employment is furnished 10 months in the year, the idleness being consequent upon the nature of the business.

No strikes have occurred.

The following are given as the prices per cubic yard of cut stone for the years named: 1870, \$2 to \$5; 1875, \$1 50 to \$4; 1880, \$1 50 to \$4.

The return states that wages constitute about 25 per cent. of the total product.

There has been no change in the efficiency of labor.

It is stated in this return that the business is both dangerous and unhealthful, accidents being occasioned by the sudden breakage of chains, ropes, derricks, etc., and in lifting heavy bodies of stone. Consumption, caused by inhaling stone-dust, is very common among stone-cutters.

Blatz, Krebs & Co., Louisville, Kentucky.

Classes of employes.	Unit of payment.	DATES.											
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Carvers.....	Day	\$3 50	\$3 25	\$3 00	\$3 00	\$3 75	\$4 00	\$4 25	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00
Stone-cutters .....	...do	2 00- 2 25	2 00- 2 25	1 75- 2 00	1 75- 2 00	2 40- 2 75	2 50- 3 00	2 75- 3 25	3 50- 4 00	3 50- 4 00	3 50- 4 00	3 50- 4 00	3 50- 4 00
Laborers .....	...do	1 00	1 00	1 50	1 50	1 75	2 00	2 25	2 25	2 25	2 25	2 25	2 25

REMARKS.—Payments are weekly.

All classes work 10 hours a day and 10 months a year, the idleness being occasioned by cold weather.

About 33½ per cent. of the total cost of product is labor.

There has been no increase in the efficiency of labor.

A steam stone saw-mill has been put into operation at this quarry, which has reduced the price of product without affecting the rate of wages.

T. Cavanaugh, Saint Louis, Missouri.

Classes of employes.	Unit of payment.	DATES.													
		1881.	1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1800.	1868.
Stone-mason	Day....	\$3 00	\$2 50			\$2 25									\$2 75
Mason's laborer	do	2 50	1 75												
Quarryman	do	2 50	2 00			1 75									2 25
Rock-breaker	Square ..	1 25													
Curb-dresser	Lin. foot ..	8													
Paving-dresser	Square ..	2 25													
Paver	Day....	1 00													
Common laborer	do	1 75- 2 00	1 25			1 25									1 25- 1 50
Teamster	Month ..														

Classes of employes.	Unit of payment.	DATES.													
		1807.	1860.	1805.	1804.	1868.	1802.	1801.	1860.	1850.	1858.	1857.	1850.	1855.	1854.
Stone-mason	Day				\$2 75				\$4 00			\$2 75		\$1 50- 1 75	
Mason's laborer	do				1 50									1 00- 1 25	
Quarryman	do				2 00									1 25	
Rock-breaker	Square ..				1 00									1 00	
Curb-dresser	Lin. foot ..				10									10	
Paving-dresser	Square ..				1 25- 1 50									1 25- 1 50	
Paver	Day				1 50									1 50	
Common laborer	do				1 25- 1 50									1 00	
Teamster	Month ..													12 00- 14 00	

REMARK.—No supplementary statements accompany this report.

Grafton Quarry Company, Saint Louis, Missouri.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.
Bookkeeper	Month ..	\$75 00	\$75 00	\$75 00	\$75 00	\$110 00	\$110 00	\$125 00	\$125 00
Clerk	do	50 00	50 00	50 00	50 00	70 00	70 00	70 00	70 00
Foreman	do	100 00- 190 00	100 00- 104 00	100 00- 104 00	100 00- 104 00	100 00- 117 00	100 00- 117 00	100 00- 130 00	100 00- 130 00
Quarryman	Day	2 25	1 75	1 75	2 00	2 60	2 25	2 50	2 50
Laborer	do	2 00	1 25	1 25	1 50	1 50	1 50	1 75	1 75
Engineer	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Stone-mason	do	3 50	2 50	2 50	2 50	3 00	3 00	4 00	4 00
Teams	do	4 50	3 00	3 25	3 50	3 75	4 00	4 50	4 50
Carts	do	2 25	2 00	2 25	2 25	2 25	2 25	2 50	2 50

REMARKS.—This firm is engaged in quarrying limestone and Grafton rubble-stone, footing and curbing, and crosswalks, and it also contracts for building sewers and laying street pavements.

Opportunity for work on holidays is given, which is paid for at regular rates and not included in the above table.

No allowances are granted and no deductions required.

Payments are in cash and every two weeks.

The hours of labor are 10 a day, except in very hot weather, when the men do not work from 11 a. m. to 2 p. m., on account of heat.

The quarry is operated 10 months a year.

Several strikes have occurred, and the demands of the strikers for increased wages have generally been acceded to.

The following statement of prices is given:

Year.	Rubble stone, per perch.	Footing stone, per perch.	Paving stone, per square.	Macadam, per square.
1875.....	\$1 25	\$3 00	\$7 50	\$2 50
1880.....	1 50	3 50	8 00	3 00

This proprietor remarks a decrease in the efficiency of labor, for which he can assign no reason.

No labor-saving machinery has been introduced.

The trade is considered neither dangerous nor unhealthful.

STATISTICS OF WAGES—STONE QUARRYING AND WORKING.

L. H. Webber, Dayton, Ohio.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Foreman	Day	\$3 33	\$3 33	\$3 33	\$3 33	\$3 35	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50
Clerk	do							4 00	4 00	4 00	3 00	3 00
Stone-cutter	do	2 25	2 25	2 00	2 00	2 75	3 00	3 00	3 00	3 00	3 25	3 25
Teamster	do	1 75	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	2 00	2 00
Engineer	do	2 50	2 50	2 25	2 50	2 50	2 50	2 50	2 50	2 50	3 00	3 00
Sawyer	do	1 05	1 05	1 50	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00
Laborer	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75
Driller	do	1 07	1 07	1 50	1 75	1 75	2 00	2 00	2 00	2 00	2 25	2 25
Setter	do	2 25	2 25	2 25	2 50	2 50	3 00	3 00	3 00	3 00	3 50	3 50
Carver	do	2 50	2 50	2 50	2 75	3 00	3 50	3 25	3 25	3 25	3 50	3 50

REMARKS.—The expense for tools to the employé is about 10 cents a day, and has not been considered in the table.

Ten hours a day are worked 9 months in the year, and 9 hours during the short days.

As is usual in stone-quarrying, these works have been in operation but 10 months a year, cold weather being the cause for suspension.

Strikes were frequent in 1870, 1871, and 1872, since which time the scarcity of work has rendered the men less independent.

From 1868 to 1879 payments were weekly; since the latter date they have been monthly or on application. Nine-tenths cash and one-tenth store-orders is the rule.

The cost of labor is placed at from 50 to 60 per cent. of the total cost of product.

No change in the efficiency of labor has been noted, and no labor-saving machinery has been introduced.

This firm believes the trade to be healthful.

PAINTS AND WHITE LEAD.

This classification includes the manufacture of white lead and other paints. Of 30 schedules sent to the manufacturers of these articles but 5 were returned, and these are all tabulated.

There are two points in connection with the explanatory and supplemental statements that are worthy of consideration. The first is the low percentage that the cost of labor in these works bears to the total cost. The labor cost of white lead, for example, as given in the different schedules, is from 1.7 mill to 5.66 $\frac{2}{3}$ mills per pound, and the percentage of wages to cost is from 2 to 10 per cent. It is evident from this great range of percentage of wages to cost, however, that at the different works the items of labor cost and of total cost were not the same in every case.

A second point that deserves special notice is the healthfulness of this occupation. It has always been regarded as very unhealthful. The fumes from corroding and the dust from grinding are the causes of certain diseases known as "lead diseases", especially lead-poisoning. It would appear, however, from the schedules, that very great improvements have recently been made in the sanitary arrangements of the factories, and the injurious effects of working in lead, while not entirely removed, have been very greatly modified.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

An establishment in Missouri.

Classes of employes.	Unit of payment.	DATES.															
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.
Foreman	Month ..	\$58 50	\$52 00	\$52 00	\$52 00	\$52 00	\$52 00	\$52 00	\$54 00	\$54 00	\$54 00	\$50 80	\$50 80	\$50 80	\$50 80	\$62 40	\$62 40
Engineer	Day	2 25	2 00	2 00	2 00	2 00	2 00	2 00	2 10	2 10	2 10	2 30	2 30	2 30	2 30	2 40	2 40
Teamster	do	1 75	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 25	2 25	2 25
Boy	do	1 00	1 00	1 00	1 00	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Laborer	do	1 75	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 25	2 25	2 25

REMARKS.—At some seasons of the year there are opportunities for over-time at these works, for which regular rates are paid. These have not been considered in making up the wages table.

There are no allowances, and employes are not at any expense for tools.

Payments are weekly, and exclusively in cash.

All classes work 10 hours a day.

The works run 11 months a year, the annual stoppage being for repairs. No strikes have taken place.

The efficiency of labor has remained unchanged.

Many improvements have been made in machinery. These have diminished cost of production, and also the number of employes in production to amount of work turned out. The actual number of employes, however, is the same, as the output has been increased.

The selling price and labor cost of white lead were as follows for the years named:

Year.	Selling price per pound.	Labor cost per pound.
1870.....	\$0 10 $\frac{1}{2}$	\$0 01 $\frac{1}{2}$
1875.....	9 $\frac{1}{2}$ $\frac{1}{2}$	0 $\frac{1}{2}$ $\frac{1}{2}$
1880.....	8 $\frac{1}{2}$ $\frac{1}{2}$	0 $\frac{1}{2}$ $\frac{1}{2}$

The manufacture of lead product is known to be unhealthful, but by the introduction of sanitary methods the employes at this establishment have been exempt for some years from sickness arising from the nature of the business.

STATISTICS OF WAGES—PAINTS AND WHITE LEAD.

J. H. Morley & Co., Cleveland, Ohio.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman	Month..	\$65 00	\$59 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$45 00	\$45 00	\$45 00	\$45 00	\$45 00
Clerk	Day ...	4 80½	4 80½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½	3 84½
Engineer	do ...	3 17	3 17	3 17	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 25	2 25	2 25	2 25
Carpenter	do ...	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Boy	do ...	75	66½	1 00	83½	66½	58½									
Laborer	do ...	1 25	1 17	1 17	1 00	1 00	1 25	1 50	1 67	1 67	1 67	1 67	1 67	1 67	1 67	1 50

REMARKS.—Payments have been uniformly weekly and in cash.

All employes work 10 hours except office-men, superintendent, and engineers, who some two or three months in the year—winter, usually—work only 8 $\frac{1}{2}$ to 9 hours. The opinion is expressed that 10 hours is a fair day's work.

From 1866 to 1870 the works ran continuously; from 1871 to 1879, 11 months per year, the idleness being for repairs. In the census year but 9 months were made, six weeks of the stoppage being for want of orders, as stock had accumulated.

There have been no strikes.

There has been no increase in the efficiency of labor, and no labor-saving machinery has been introduced, though greater production has been attained in that already in use.

Below are statements of the selling price from the date of establishment:

Year.	White lead, ground in oil, per ton.	Red lead, dry, and litharge, per ton.
1865.....	\$320 00	\$300 00
1870.....	220 00	200 00
1875.....	180 00	170 00
1880.....	100 00	140 00

Wages are about 10 per cent. of total cost of product.
The trade is regarded as unhealthful.

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Foreman	Month..	\$76 33	\$76 33	\$76 33	\$76 33	\$76 33	\$76 33	\$76 33	\$75 00
Clerk	Day ...	3 04	3 04	3 04	3 04	3 04	3 04	3 04	3 04
Engineer	do ...	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Carpenter	do ...	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 60 $\frac{1}{2}$
Teamster	do ...	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	2 00	2 00	2 00	2 00
Laborer	do ...	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50

REMARKS.—There were opportunities for extra earnings from over-time during the years 1873-'76, inclusive, for one-third of the hands at this establishment. These would increase wages about 25 per cent., and have not been included in the rates given.

There are no deductions.

Payments are in cash and weekly.

All classes work 10 hours a day 10 months in the year; the idleness, which is in December and January, is due to the light demand usual in the lead and paint business at this season.

Workmen in this industry sometimes contract the disease known as "lead-colic". By the use of a large suction fan, attached to all parts of the machinery where lead is worked in the dry state, however, it has been found possible to deposit the dust from the lead in water, and all danger of disease has thereby been reduced to a minimum.

Strikes never occur at this establishment.

The following statement is made regarding selling price, etc.:

Year.	WHITE LEAD.		
	Selling price per 100 pounds.	Labor cost per 100 pounds.	Percentage of wages to cost.
1875.....	\$9 50	\$9 50	8
1880.....	7 75	50	8

There has been no change in the efficiency of labor.

In 1878 the firm erected a new factory, with improved machinery, the effect of which was to increase output 50 per cent. with but 10 per cent. increase in labor.

STATISTICS OF WAGES—PAINTS AND WHITE LEAD.

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An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Foreman.....	Month..	\$49 83½	\$40 83½	\$40 83½	\$40 83½	\$40 83½	\$40 83½	\$40 83½	\$40 83½
Clerk.....	Day....	1 01½	1 01½	1 01½	1 01½	1 01½	1 01½	1 01½	1 01½
Engineer.....	do....	1 01½	1 01½	1 01½	1 01½	1 01½	1 01½	1 01½	1 01½
Carpenter.....	do....	1 01½	1 01½	1 01½	1 01½	1 01½	1 01½	1 01½	1 01½
Teamster.....	do....	02½	02½	02½	02½	02½	02½	02½	02½
Boy.....	do....	02½	02½	02½	02½	02½	02½	02½	02½
Girl.....	do....	02½	02½	04½	02½	02½	02½	02½	02½
Laborer.....	do....	02½	02½	02½	02½	02½	02½	02½	02½

REMARKS.—About 3 per cent. of the wages given in the above table are for over-time.

There are no allowances or deductions.

Payments are fortnightly and in cash.

All classes work 10 hours a day.

The only increase in the efficiency of labor is that arising from experience.

The average selling price of paint per pound from 1873 to 1880 is given as 9½ cents; the cost of labor per pound as 1½ cent, which is stated to be 25 per cent. of the total cost.

The works are in operation 11 months a year, the cause of irregularity being light demand at certain seasons. There have been no strikes.

No labor-saving machinery has been introduced.

Oliver Johnson & Co., Providence, Rhode Island.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Foreman.....	Month..	\$78 00	\$78 00	\$78 00	\$78 00	\$65 00	.....	\$83 33½	\$83 33½	\$83 33½	\$83 33½
Engineer.....	Day....	2 50	2 75	2 75	2 75	2 75	\$2 75	2 50	2 50	2 25	.....
Boy.....	do....	1 00	1 16½	1 00	83½	83½	95½	95½	83½	83½	66½
Laborer.....	do....	1 33½	1 25	1 25	1 25	1 58½	1 58½	.....	.....	1 33½	.....

REMARKS.—Employes are paid once a week in cash.

The hours of labor for all classes are 10 a day, and the works are in constant operation.

The following statement regarding prices, cost of labor, and percentage of wages to cost, is furnished by this establishment, and is very complete:

Year.	SELLING PRICE.			LABOR COST.			PERCENTAGE OF WAGES TO COST.		
	Lead, 100 lbs.	Mixed paints, 100 lbs.	Villa paints, 100 lbs.	Lead, 100 lbs.	Mixed paints, 100 lbs.	Villa paints, 100 lbs.	Pure lead.	Mixed paints.	Villa paints.
							Per cent.	Per cent.	Per cent.
1865.....	\$16 50	\$10 50 to \$15 00	.....	.....	.....	.....	1.06	2.1 to 1.8	.....
1870.....	11 00	7 50 to 10 00	\$10 50	\$0 17	\$0 42	\$0 25	1.02	1.78 to 2.6	2.6
75.....	11 00	7 50 to 10 00	10 00	17	35	25	1.62	1.78 to 2.0	2.7
1880.....	9 00	6 00 to 8 00	8 00	17	41	25	2.00	2.4 to 3.4	2.5

This firm states that while the grinding of lead is usually considered unhealthful, there has been but one case of sickness among

the men said to be from this cause; the employes with this exception being as free from disease as in other occupations.

PAPER MANUFACTURE.

Few, if any, of the returns received from the different industries are more complete and interesting than those relating to the manufacture of paper. Some statements give rates of wages for a number of classes of industry from 1850; one return from 1801, while some of the most noted paper manufactories in the country are represented in the tabulations.

Under this general classification of paper is included the manufacture of a very wide range of grades and kinds, comprising many grades of book, news, writing, envelope, wall, colored, wrapping, and manila papers, straw-, leather-, and card-board. It was impossible to classify these separately, as many mills made more than one kind.

There were sent to establishments connected with this industry 157 schedules, of which 48 were returned and 36 are tabulated. Those that are tabulated are divided as follows by states:

Connecticut	1	Maine	2	New York	5
Delaware	2	Massachusetts	8	Ohio	4
Georgia	2	Michigan	1	Pennsylvania	3
Illinois	1	New Hampshire	2	Virginia	1
Indiana	2	New Jersey	1	Wisconsin	1

In addition to the returns for paper-making, one schedule—that of the Nashua Card & Glazed Paper Company—gives the following statement of rates of wages per day for colorers, glazers, platers, etc., for the beginning of each decade from 1850:

Classes of employes.	1850.	1870.	1890.	1850.
Colorers, male	\$2 00	\$2 00	\$1 50	\$1 50
Colorers, female	1 00	1 00	1 00	1 00
Glazers, male	2 50	2 50	2 00	2 00
Glazers, female	1 12½	1 12½	1 00	1 00
Platers, male	1 50	1 75	1 25	1 25
Platers, female	83½	83½	75	75
Laborers, male	1 25	1 50	1 00	1 00
Overseers	2 50	2 50	2 00	2 00

In this same schedule is also a very interesting statement as to the prices of product, cost of labor to unit of product, and percentage of wages to cost, which is as follows:

Year.	PRICES OF PRODUCT.						COST OF LABOR TO UNIT OF PRODUCT.						PERCENTAGE OF WAGES TO COST.					
	Blanks per 100.	Chinas per 100.	Enameled per 100.	White glazed paper per ream.	Pamphlet covers per ream.	Enameled paper per ream.	Blanks per 100.	Chinas per 100.	Enameled per 100.	White glazed paper per ream.	Pamphlet covers per ream.	Enameled paper per ream.	Blanks per 100.	Chinas per 100.	Enameled per 100.	White glazed paper per ream.	Pamphlet covers per ream.	Enameled paper per ream.
1850..	\$0 07	\$0 00	\$0 14	\$7 00	\$20 00	.....	\$0 00½	\$0 00½	\$0 00½	\$0 01½	\$0 02½	.....	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
1855..	0	5	12	6 50	18 00	.....	0½	0½	0½	1½	2½	.....	7½	8½	6½	22	13	.....
1860..	5	4	10	6 00	16 00	.....	0½	0½	0½	0½	2	.....	8½	10½	7	23½	14½	.....
1865..	10	0	20	13 00	22 00	\$15 00	0½	0½	0½	0½	2	\$0 01½	10½	10½	7	17½	13	.....
1870..	5	4	10	6 00	14 00	10 00	0½	0½	0½	0½	2	1½	10½	10½	7	17½	14½	15½
1875..	4	3	7	4 00	0 00	8 00	0½	0½	0½	0½	2	1½	12½	13½	0½	25½	22½	19½
1880..	3½	2½	5	3 00	7 50	6 00	0½	0½	0½	0½	2	1½	14½	16½	15½	34	27½	25½

Accompanying the report of the Carson & Brown Company—the old Berkshire mills of Dalton, Mass.—was a very interesting statement regarding the history of this mill, which was the first paper-mill in Massachusetts west of the Connecticut river. I regret that it is not possible to give this statement in its entirety. Regarding wages, in the early history of the mill, the following statement is made:

These parties, Wiswell, Crane, and Gilbert, owned the mill—a “one-vat mill”—till May 12, 1807. The capacity of a “one-vat mill” or “day’s work” was 20 “posts” containing 125 sheets of paper each—“folio” or “cap” size—making 100 to 125 pounds of paper, and required an “engineer”, “vatman”, “concher”, and “laboy”; the first receiving \$3 per week. The next two “skilled workmen” commanded \$3 50 per week and boarded themselves; while the “laboy” received 60 cents per week and board; and Mr. Crane to manage the mill and business.

Extra earnings or deductions.—The employes in this industry at most works appear to be divided into two classes; one consists of those workmen who work “tours” or “gangs” or “shifts”, as they are called; that is, the employes of those departments that run night and day, except Sundays. These employes are divided into two crews or shifts, which work 12 hours. The other class are the employes in the mills working in single shifts, or during the day.

From this it would appear that there are very few opportunities for extra earnings. Those workmen usually employed only in the day, occasionally make over-time either for repairs or from extraordinary demand. A few schedules report that all workmen have opportunities for making extra time, but these are very infrequent.

As a rule, there are no allowances at the mills reporting. A few instances are named where houses are furnished to certain employes either rent-free or at low rates. In some cases, also, land for garden and pasturage is furnished, these chiefly in the southern states.

There are but three of these returns in which it is reported that the employes have to pay out any thing for tools. At two of these the carpenters, and at the third both carpenters and millwrights, have this expense. Where there are omissions of statements, therefore, in the explanatory remarks, as to allowances and deductions, it will be understood that there are none.

Payments are almost uniformly in cash at the mills reporting. The intervals of payment for the years covered by the different schedules are as follows:

Interval of payment.	1880.	1875.	1870.	1865.	1860.	1855.	1850.	1845.	1840.	1835.	1830.
Weekly.....	11	8	5	5	2	2	2	1			
Semi-monthly.....	2	3	1								
Monthly.....	25	26	22	16	8	5	3	1			
Quarterly.....			1	1	1	1	1	1			
Semi-yearly.....					1	1	1				
On application.....	1	1	1	2	1				1	1	1

Hours of labor.—As has already been noted, there are two classes of labor at most of the works, which may be termed tour men and day men. The four men work, as a rule, 12 hours a day. Sometimes their hours of labor are reckoned 11 only, they being allowed an hour off for meals after working 5 or 6 hours. The usual hours of labor of the other classes are 10. There seems to have been little change in these hours at the different works. In several schedules giving hours of labor from 1845 and 1850 the hours worked were the same in 1880 as at the earlier date.

Regularity of employment.—The works reporting have run with unusual regularity, nearly all of them reporting as having been in operation 12 months in the year. The irregularity, where it has occurred, has been chiefly due to repairs, to high or low water, most of the mills being run by water-power, and in a few instances to depression in business. It is remarkable that at the 36 works reporting not a single strike or lockout is reported.

Relation of wages and labor to selling price and cost.—Some statements are made in these returns under this head, which are not only very interesting in themselves, but give some remarkable facts as to wages in this industry. For example, in the first return, that of Platner & Porter, under the head of “book paper per pound”, it is stated that the selling price of machine-finished book-paper has declined from 19 cents a pound in 1865, to 9 cents a pound in 1880, and of super-calendered paper from 20 cents a pound in 1865 to 10 cents a pound in 1880; that is, there has been a decline of 50 per cent. in the selling price of these two papers in these 15 years, and yet the labor cost per pound is precisely the same in 1880 as in 1865, being 1½ cent for machine-finished book-paper and 1¾ cent for super-calendered paper. Other schedules, while they show a greater difference in labor cost than this one, bear out the deduction that in the great decline in the selling price of paper in the past few years there has not been a corresponding decline in the labor cost. Several of the statements made under these heads in the remarks accompanying the tabulations are well worthy of study.

Efficiency of labor.—Few schedules show any change in the efficiency of labor. It is a fact that in the early days of paper-making, especially in the manufacture of hand-paper, great skill was required. With the introduction of machinery into the manufacture of paper the character of the service required has greatly changed.

Labor-saving machinery.—Very great improvements have been made in the machinery used in this industry, the result of which has been largely to increase the output and greatly to decrease the labor cost.

Healthfulness and accidents.—Regarding accidents, it seems that they are no more common in this industry than in others where machinery is used.

Quite a number of schedules make statements regarding the prevalent opinion that contagious and infectious diseases are often contracted from the rags used in paper-mills. The general opinion is that such danger does not exist or that it has been very greatly overestimated. Only two schedules state that there have been any such diseases among their employés that can be traced to the rags. Nearly all the other statements are to the effect that there is no knowledge of any such diseases having been acquired.

Wages in Great Britain.—The following statement, from the *Miscellaneous Statistics of the United Kingdom*, Part XI, gives the rates of wages paid in the paper-mills of London and Edinburgh, and is inserted here for purposes of comparison. There is no indication as to the class of paper made:

Proportion of persons employed per 100 hands.	Description of occupations.	Employés.	Rates of wages per week.	Hours of labor per day.	Proportion of persons employed per 100 hands.	Description of occupations.	Employés.	Rates of wages per week.	Hours of labor per week.
	EDINBURGH AND NEIGHBORHOOD.					LONDON.			
20.0	Paper-makers.....	Men.....	\$4 84	10		Paper-makers.....	Men.....	\$7 20	72
	Paper-makers.....	Lads and boys.....	1 45	10		Paper-makers' assistants.....	Lads.....	3 30	72
32.0	Glaziers and sorters.....	Women.....	2 43	10		Finishers.....	Men.....	6 05	72
	Glaziers and sorters.....	Girls.....	1 45	10		Finishers.....	Lads and boys.....	2 18	60
2.0	Finishers.....	Women.....	2 90	10		Rag sorters and cutters.....	Women.....	2 54	60
15.0	Rag sorters and cutters.....	Women.....	2 54			Rag sorters and cutters.....	Girls.....	1 81	60
3.5	Stokers.....	Men.....	5 80	12		Stokers.....	Men.....	6 05	72
0.0	Mechanics.....	Men.....	6 29	10		Mechanics.....	Men.....	8 47	72
0.0	Laborers.....	Men.....	3 03	10		Laborers.....	Men.....	5 08	60
6.5	Esparto workers.....	Men.....	\$4 80-4 84	10		Laborers.....	Lads and boys.....	1 60	60
	Esparto workers.....	Women.....	2 42	10					
100.0									

Platner & Porter Manufacturing Company, Unionville, Connecticut.

[WRITING AND BOOK.]

[Continued on next two pages.]

Classes of employés.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman.....	Day....	\$4 00	\$4 00	\$4 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$8 33	\$8 33	\$8 33	\$8 33	\$6 07	\$6 07
Overseer in rag-room.....	do....	2 00	1 75	1 75	2 50	2 30	2 30	2 30	2 02	2 36	2 36	2 36	2 25	2 00	2 00	2 50
Rag-sorter, girl.....	do....	1 00	75	75	1 00	1 00	1 00	1 00	1 05	1 00	1 00	1 00	92	90	90	90
Bleacher.....	do....	1 35	1 25	1 25	2 00	2 00	2 00	2 02	2 25	2 25	2 00	2 00	1 67	1 67	1 67	1 67
Rag engineer.....	do....	2 00	1 75	1 75	2 62	2 62	2 62	2 70	3 00	2 75	2 62	2 62	2 50	2 50	2 50	2 25
Rag engineer's helper.....	do....	1 85	1 25	1 25	1 62	1 62	1 62	1 57	1 75	1 75	1 75	1 67	1 67	1 67	1 67	1 67
Machine-tender.....	do....	2 50	2 50	2 50	3 00	3 00	3 00	3 00	3 25	3 00	3 00	2 86	2 75	2 75	2 50	2 25
Machine-tender's helper.....	do....	1 35	1 25	1 25	1 62	1 62	1 62	1 62	1 75	1 75	1 67	1 75	1 67	1 67	1 67	1 50
Back-tender.....	do....	1 35	1 25	1 25	1 62	1 62	1 62	1 62	1 75	1 75	1 67	1 75	1 67	1 67	1 67	1 50
Finisher.....	do....	2 00	2 00	1 75	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	2 75	2 75	2 50	2 50
Finisher's helper.....	do....	2 00	1 75	1 50	2 02	2 02	2 02	2 02	2 02	2 02	2 02	2 02	2 50	2 50	2 25	2 25
Cutter, girl.....	do....	87½	75	75	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	90	90	90	90
Loftman.....	do....	2 00	2 00	1 75	3 00	3 00	3 00	2 70	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Calenderer, girl.....	do....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 10	1 00	1 00	1 00	1 00	1 00	1 00	92
Folder, girl.....	do....	1 00	1 00	1 00	1 00	1 08	1 08	1 08	1 20	1 08	1 08	1 08	1 08	1 08	1 08	1 00
Fireman.....	do....	1 40	1 25	1 25	1 80	2 00	2 00	2 00	2 00	2 25	2 00	2 00	2 00	2 00	2 00	2 00
Machinist.....	do....	2 50	2 50	2 50	3 25	3 00	3 00	3 60	4 00	3 75	3 75	3 75	3 75	3 75	3 75	3 00
Millwright.....	do....	2 50	2 50	2 50	3 25	3 60	3 60	3 60	4 00	3 75	3 75	3 75	3 75	3 75	3 75	3 00
Carpenter.....	do....	2 25	2 00	2 00	2 25	2 50	2 75	2 70	2 25	2 50	2 25	2 25	2 25	2 17	2 00	2 00
Teamster.....	do....	1 50	1 35	1 25												
Laborer.....	do....	1 40	1 35	1 25	1 71	1 71	1 00	1 80	2 00	2 00	2 00	1 75	1 75	1 75	1 67	1 50

Platner & Porter Manufacturing Company, Unionville, Connecticut—Continued.

Classes of employés.	Unit of payment.	DATES.															
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Foreman	Day	\$0 67	\$0 67	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$2 00	\$2 00	\$1 50	\$1 50
Overseer in rag-room	do	2 00	2 00	1 07	1 33	1 33	1 47	1 31	1 31	1 31	1 31	1 31	1 00	1 00	94	85	85
Rag-sorter, girl	do	75	62½	58	58	58	58	58	58	54	50	50	50	50	45	45	45
Bleacher	do	1 50	1 50	1 00	1 00	1 00	1 00	92	92	85	85	85	85	85	85	85	85
Rag engineer	do	2 00	1 67	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 33	1 17	1 08	1 00	1 00
Rag engineer's helper	do	1 50	1 50	1 00	92	92	92	92	92	92	85	85	85	85	85	85	85
Machine-tender	do	2 00	1 67	1 67	1 50	1 50	1 50	1 50	1 50	1 50	1 58	1 67	1 33	1 17	1 08	1 00	1 00
Machine-tender's helper	do	1 50	1 50	1 00	92	92	92	92	92	92	85	85	85	85	85	85	85
Back-tender	do	1 50	1 50	1 00	92	92	92	92	92	92	85	85	85	85	85	85	85
Finisher	do	2 50	2 50	1 67	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 17	1 08	1 08	1 00	1 00
Finisher's helper	do	2 25	2 25	1 50	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 33	1 08	1 00	1 00	.....	.....
Cutter, girl	do	90	67	58	58	58	58	58	58	58	58	58	50	50	50	48	48
Loftman	do	2 25	2 25	1 67	1 67	1 67	1 42	1 41	1 33	1 33	1 33	1 08	1 00	1 00	1 00	1 00	1 00
Calenderer, girl	do	75	67	58	58	58	58	58	58	58	50	50	50	50	48	48	48
Folder, girl	do	83	90	67	67	67	67	58	58	58	58	58	50	50	50	50	50
Fireman	do	1 50	1 50	1 00	92	92	92	92	92	92	85	85	85	85	85	85	85
Machinist	do	3 00	2 50	1 75	1 50	1 50	1 50	1 50	1 50	1 33	1 33	1 17	1 00	1 00	1 00	1 00	1 00
Millwright	do	3 00	2 50	1 75	1 50	1 50	1 50	1 50	1 50	1 33	1 33	1 17	1 00	1 00	1 00	1 00	1 00
Carpenter	do	1 67	1 67	1 17	1 17	1 17	1 17	1 17	1 17	1 17	1 17	1 17	1 17	1 00	1 00	1 00	1 00
Teamster	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Laborer	do	1 50	1 50	1 00	1 00	1 00	1 00	92	85	85	85	85	85	85	85	85	85

REMARKS.—Rates of wages for a large number of classes of labor are given from 1850. Two mills are operated, one on fine writing paper, the other on book paper.

In addition to the rates of wages given in the above table, rates for counter, sealer, and box-maker are given for the same period as follows:

Classes of employés.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Counter, girl.....	Day	\$1 00	\$1 00	\$1 00	\$1 08	\$1 08	\$1 08	\$1 08	\$1 08	\$1 08	\$1 08	\$1 08	\$1 08	\$1 08	\$1 08	\$1 00
Sauler.....	do	1 00	1 50	1 50	2 00	2 00	2 00	1 05	2 17	2 00	1 67	2 00	2 50	2 50	2 50	2 00
Box-maker	do	2 50	2 50	2 50	2 50	2 75	2 75	2 70	2 75	2 50	2 25	2 25	2 17	2 17	2 17	2 00

Classes of employés.	Unit of payment.	DATES.															
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Counter, girl	Day	\$0 89	\$0 67	\$0 67	\$0 67	\$0 67	\$0 67	\$0 58	\$0 58	\$0 58	\$0 58	\$0 58	\$0 50	\$0 50	\$0 50	\$0 50	\$0 50
Sealer	do	1 67	1 67	1 67	1 67	1 42	1 33	1 42	1 42	1 42	1 42	1 42	1 17	1 17	1 17	1 00	1 00
Box-maker	do	2 00	2 00	2 00	2 00	2 00	1 17	1 17	1 17	1 17	1 17	1 17	1 17	1 00	86	86	77

The mill frequently runs over-time in the finishing department during the pressure of the season. The extra earnings for which opportunity is thus afforded would increase wages from 5 to 10 per cent., and have not been included in the above rates.

There are some allowances, among which are coal at cost and houses at low rent.

Payments are in cash.

From 1850 to 1864, payments were made once in six months; since that date they have been monthly.

Finishers and all other classes work 10 hours. The number of employés working 12 hours is but a small proportion of the entire number.

Rag engineer and helper and fireman work "tours", that is, two sets of men work 24 hours—12 hours each. These hours are necessary with "tour" men, as their duties pertain to that part of the mill which customarily runs day and night, Sundays excepted.

The mill has been in constant operation except in the year 1861, during a part of which it did not run full time, and the first half of 1878, when it was idle on account of unusually light demand.

The proprietors state that they have never had a lock-out, their relations with their men always having been cordial and friendly.

The following very full statement of prices, labor cost, and relation of wages to total cost is given:

Year.	PRICES OF PRODUCT.						COST OF LABOR TO UNIT OF PRODUCT.						PERCENTAGE OF WAGES TO COST.					
	Writing paper, per pound.			Book paper, per pound.			Writing paper, per pound.			Book paper, per pound.			Writing paper.			Book paper.		
	First class, folded.	Super-fine, folded.	Super-fine, flats.	Machine-finished.	Super-calendered.	.....	First class, folded.	Super-fine, folded.	Super-fine, flats.	Machine-finished.	Super-calendered.	.....	First class, folded.	Super-fine, folded.	Super-fine, flats.	Machine-finished.	Super-calendered.	.....
1855...	\$0 30	\$0 27	\$0 24	.....	.....	.....	\$0 03½	\$0 03½	\$0 02½	\$0 02½	.....	.....	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1860....	30	27	24	.....	.....	.....	4	4	2½	2½	.....	.....	13	14½	10	.....	.....	.....
1865....	52½	50	45	.....	\$0 19	\$0 20	5	3	3½	3½	\$0 01½	\$0 01½	12	15	12	.....	.....	.....
1870....	35	32½	20	\$0 24	14	16	6	6	4½	4½	1½	1½	18	20	10½	20	12	15
1875....	32½	30	27	22	19½	14½	7½	7½	6	6	1½	2	25	27	24	20	12½	15½
1880....	23	21	19	17	9	10	4½	4½	3	3	1½	1½	20	22½	10½	19	15	18½

Platner & Porter Manufacturing Company, Unionville, Connecticut—Continued.

There has been no perceptible increase in the efficiency of labor. Much improved machinery has been introduced. Larger washing and beating pulp-machines are now used, and the mills are built of increased capacity. A continual improvement has been made in the details of the construction of engines, machines, rag-dusters, cutting-presses, etc. The effect of the former change has been to increase the cost of mills but to decrease the cost of "plant" per ton of productive capacity; the effect of the latter to improve the quality of product, and to render possible the use of new and cheaper material. The effect on labor has been to lessen the number of em-

ployés per ton of product, to raise the standard of intelligence, and to increase the rate of wages. It is stated that in 1850 skilled labor was worth only from 15 to 20 per cent. more than unskilled; from 1875 to 1880, 40 to 80 per cent. more.

The trade is healthful. Where an inferior quality of rags is used, as is the case with some paper-mills making lower grades of paper, rare instances have occurred of infectious diseases being imparted to employés by contact with diseased rags. Such precautions are now used throughout the world, however, as to yearly lessen the danger of such infection.

Curtis & Brothers, Newark, Delaware.

[COLORED CARD, ENVELOPE, AND GRANITE.]

Classes of employés.	Unit of payment.	DATES.														
		1850.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman	Day	\$4 00					\$4 00					\$5 00		\$4 00		
Overseer in rag-room	do	1 42					1 70					1 50		1 50		
Rag-sorter	do	75					75					75		75		
Bleacher	do	1 50					1 50					1 50		1 50		
Assistant bleacher	do	1 25					1 25					1 25				
Rag engineer	do	1 90					1 90					1 52		1 42		
Machine-tender	do	2 00					2 00					2 00		2 00		
Machine-tender's helper	do	1 00					1 42					1 25		1 25		
Back-tender	do															
Finisher	do	1 83					2 00					1 83		1 83		
Cutter, girl	do	75					75					75		75		
Calenderer	do	1 83					1 83					1 40		1 25		
Steam-engineer	do	1 00					1 00									
Teamster	do	1 42					1 42					1 33		1 33		
Laborer	do	1 25					1 50					1 50		1 50		

Classes of employés.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Foreman	Day															
Overseer in rag-room	do	\$1 33					\$1 00					\$0 75				\$1 00
Rag-sorter	do	50					50					50				50
Bleacher	do	1 25					87					75				72
Assistant bleacher	do															
Rag engineer	do	1 33					1 15					1 00				1 00
Machine-tender	do	1 00					2 00					1 25				1 16
Machine-tender's helper	do	1 00					88					61½				65
Back-tender	do											61½				65
Finisher	do	1 00					1 10					1 00				1 00
Cutter, girl	do															
Calenderer	do															
Steam-engineer	do															
Teamster	do	1 25					75					75				75
Laborer	do	1 33					75					75				62

REMARKS.—Employés are provided with houses free of rent. This allowance has not been considered in making up the tables, and would increase the above rates about 10 per cent.

The payments, which are monthly, are wholly in cash.

It is stated that prior to the panic of 1873 paper sold at 18 cents a pound, but since that date the price is 12 cents.

The mill has run almost constantly day and night since 1848, stopping only for repairs. A strike has never occurred at this establishment.

Men are required to work 12 hours a day and girls 10 hours.

The remark is made that paper-makers as a class are particularly healthy.

An establishment in Delaware..

[NEWS AND FINE BOOK.]

Classes of employes.	Unit of payment.	DATES.																	
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1860.	1808.	1807.	1800.	1805.	1804.	1803.
Overseer in rag-room	Day	\$2 33½			\$2 00							\$2 33½					\$2 33½		
Rag-sorter, girl	do	70			70							70					70		
Rag engineer	do	2 33½			2 00							2 33½					2 33½		
Rag engineer's helper	do	1 50			1 33½							1 50					1 50		
Machine-tender	do	2 50			2 25							2 50					2 50		
Machine-tender's helper	do	1 50			1 33½							1 50					1 50		
Finisher	do	2 33½			2 00							2 33½					2 33½		
Cutter girl	do	1 00			90							1 00					1 00		
Calender, superintendent	do	2 50			2 25							2 50							
Steam engineer	do	2 00			1 75							2 00					2 00		
Fireman	do	2 00			1 75							2 00					2 00		
Millwright	do	2 50			2 25							2 50					2 50		
Laborer	do	1 50			1 33½							1 50					1 50		

REMARKS.—News and fine book papers are made at this mill.

Wages are paid monthly and in cash.

The hours of labor have always been 12 for skilled men and 10 for laborers, millwrights, etc.

Employment has been constant except when the mill has been rebuilding after fires. As both steam- and water-power are used, operation is independent of water-supply.

There has been no change in the efficiency of labor.

Some new and improved machinery has been brought into use from time to time, the effect of which has been to increase production and to improve quality. No machinery has been introduced that did not require an increased number of hands.

The trade is healthful, and accidents are no more frequent than in other manufacturing trades in which machinery is employed.

Marietta Paper Manufacturing Company, Marietta, Georgia.

[BOOK, NEWS, AND WRAPPING.]

Classes of employes.	Unit of payment.	DATES.							
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.
Foreman	Day	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 50	\$2 50	\$2 50
Overseer in rag-room	do	77	77	77	77	77	1 00	1 00	1 00
Rag-sorter	do	30	30	30	30	30	40	40	40
Rag engineer	do	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Rag engineer's helper	do	01	01	01	01	01	1 00	1 00	1 00
Machine-tender	do	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Machine-tender's helper	do	01	01	01	01	01	1 00	1 00	1 00
Cutter, girl	do	40	40	40	40	40	50	50	50
Fireman	do	01	01	01	01	01	1 00	1 00	1 00
Teamster	do	01	01	01	01	01	1 00	1 00	1 00

REMARKS.—Book, news, and wrapping papers are made at this mill.

The allowances, which consist of free houses, gardens, firewood, and pasturage, would increase regular wages about 20 per cent., and have not been included in the rates given above.

Payments are monthly, 90 per cent. in cash and 10 per cent. in merchandise. This rule has been observed except in the year 1875, when store-orders were used to a great extent, the company exchanging paper for merchandise.

The hands work 12 hours a day, one set working the first part of the night one week and the latter part the next week. They also have an arrangement among themselves by which one set work 8 hours, which is a "long turn", every alternate Saturday, thereby giving the other set nothing to do that day.

In 1876 a fire occurred, and the mill stopped 60 days to rebuild; a

stoppage of 30 days was also occasioned in 1879 by a fire in the rag-room. With these exceptions the factories have been in constant operation. Strikes are unknown.

The following are the selling prices per pound of the varieties of paper produced at this mill for the years named, 1875 and 1880:

Year.	Book.	News and manila.	Bluc.	Rag wrapping.
1875	\$0 12	\$0 10	\$0 10	\$0 05
1880	8	8	9	5

No increase has been noted in the efficiency of labor, nor has any improved machinery been introduced.

The business is neither dangerous nor unhealthy.

STATISTICS OF WAGES—PAPER MANUFACTURE.

Pioneer Manufacturing Company, Paper, Georgia.

[NEWS, WRAPPING, AND ENVELOPE.]

Classes of employes.	Unit of pay- ment.	DATES.																				
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.
Foreman	Day	\$4 00	\$2 50	\$3 50	\$3 00	\$3 00	\$3 00	\$2 50	\$3 50	\$4 00	\$0 00	\$0 00	\$0 00	\$2 50	\$2 50	\$2 50	\$2 00	\$10 00	\$0 00	\$2 50	\$1 00	\$2 00
Overseer in rag-room..	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 25	1 00	1 00	1 00	1 25	75	3 50	2 00	80	75	80
Rag-sorter	do	40	40	40	50	50	50	50	50	50	50	60	50	50	40	40	2 00	1 00	40	30	40	
Bleacher	do	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	75	3 00	2 00	1 00	75	1 00	
Assistant bleacher..	do	1 00	50	50			75															
Rag engineer	do	1 50	1 10	1 10	1 25	1 25	1 25	1 25	1 75	1 75	1 75	1 25	1 25	1 25	1 25	85	6 00	4 00	1 10	1 00	1 25	
Rag engineer's helper	do	80	75	75	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	60	5 00	2 50	80	75	85	
Machine-tender	do	1 75	1 75	1 50	1 75	2 00	2 50	1 50	2 50	2 25	2 25	1 50	1 50	1 75	1 75	75	5 50	3 50	1 25	1 00	1 50	
Machine-tender's help- er.	do	1 25					1 50						1 00	1 00	75	75	50	3 50	2 00	75	75	
Back-tender	do	80	80	75	1 00	1 00																
Finisher	do	1 00	1 00				1 50	1 50	1 50	1 50	1 50	1 00										
Cutter, girl	do	50	50	50	50	50	50	50	50	50	60	60	75	60	50	35	3 50	1 50	50		50	
Folder	do	1 00	75	75	80	80	80	80	80	80	80	80	80	60	50	35	3 50	1 50	50		50	
Fireman	do	1 00	75	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 10	1 00	50	4 00	1 50	75	75	75	
Machinist	do	2 25																				
Millwright	do										1 75	2 00	2 00									
Carpenter	do	1 00	1 00											1 25					1 00	1 00	1 00	
Teamster	do	60	60	75	1 00	1 00	75	1 00	1 00	1 00	1 00	1 00	1 00	80	80	50	4 25	2 25	80	75	85	
Laborer	do	60	60	60	75	75	75	75	85	80	80	80	80	80	80	50	4 00	1 75	65	75	75	

REMARKS.—Free houses and gardens, which are furnished to employes, would increase the rates in the table about 15 per cent.

Cash has been paid monthly since 1845.

All classes work 12 hours a day.

From 1845 to 1855 the mill ran 10 months a year; from 1856 to 1865 it averaged but 9 months a year, two stoppages in this period being for the purpose of rebuilding after fires. From 1866 to 1879 the works were operated 11 months, and in the census year 11½ months. Aside from the destruction of the mill by fire in the instances given, the cause of irregularity has been low water during the summer.

Labor disputes are unknown.

Improved machinery has been introduced during the last five years, in consequence of which production has increased 33½ per cent.

The trade is remarkably healthful, though there are occasional accidents.

The following statement is made regarding selling price, etc.:

Year.	SELLING PRICE.			Average labor cost of product per pound.	Percentage of wages to average cost of product.
	News paper, per pound.	Rag wrapping paper, per pound.	Envelopes, per pound.		
1850	\$0 12	\$0 00	\$0 11		Per cent.
1855	12½	8	12		
1860	10	8	9	\$0 01½	15
1865	13	10	12½	1½	12
1870	12½	8½		1½	15
1875	10½	7½		1½	15
1880	8½	6		1½	12

There has been a steady increase in the efficiency of labor, arising from experience and the introduction of skilled workmen from the North.

Waldron Paper Mills Company, Waldron, Illinois.

[STRAW AND RAG WRAPPING.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Foreman	Day	\$2 25	\$2 25	\$2 25	\$2 25	\$2 50	Cutter, girl or boy	Day	\$0 50	\$0 44	\$0 44	\$0 50	\$0 50
Bleacher	do	1 25	1 00	1 10	1 10	1 25	Folder, female	do	83	60	60	80	80
Rag engineer	do	1 50	1 25	1 25	1 37½	1 50	Fireman	do	1 37½	1 20	1 25	1 37½	1 50
Machine-tender	do	1 75	1 00	1 00	1 00	2 00	Teamster	do	2 25	2 25	2 25	2 50	2 50
Finisher	do	1 12½	1 25	1 25	1 25	1 25							

Waldron Paper Mills Company, Waldron, Illinois—Continued.

REMARKS.—There are a few opportunities for over-time. Rag engineers work about half a day extra per week, which has not been considered in making up the wages table.

No allowances are given.

Regarding payment, the proprietors state that they have never used store-orders, but pay every Monday morning in cash. This plan they consider advantageous both to employer and to employed, as it enables the former to secure a better class of operatives, and permits the latter to buy for cash, increasing the purchasing power of their wages from 10 to 20 per cent. above that of the same amount in store-orders.

The mill runs night and day. Machine-tenders, firemen, and engineers work in two shifts, 11 hours each, and have an hour for meals, one set going on at midnight one week and at noon the next. All other classes work 10 hours. No complaints against long hours are ever made by the hands, as they are paid by the hour.

The mill is usually in operation 11 months a year, the causes of idleness being the fluctuation in water-power, breakage of dams, etc. When the mill is idle the men are usually employed in making repairs.

There have been no strikes or lockouts.

The following regarding selling prices, labor cost, and percentage of wages to cost is given:

Year.	SELLING PRICE.		LABOR COST.		PERCENTAGE OF WAGES TO COST.	
	Heavy straw wrapping paper, per ton.	Light straw wrapping paper, per ton.	Heavy straw wrapping paper, per ton.	Light straw wrapping paper, per ton.	Heavy straw wrapping paper.	Light straw wrapping paper.
1876...	\$38 00	\$17 00	\$8 50	\$12 50	Per cent.	Per cent.
1878...	27 00	38 00	7 00	10 50	24	27
1880...	38 00	47 00	8 50	12 50	25	29
					24	27

Labor has not increased in efficiency.

The proprietor states that constant improvements in machinery have taken place within the last five years, which have effected an increase in quantity and improvement in quality of product and have reduced cost, but have not decreased the number of employes.

There have been no sickness or accidents among the operatives.

Erwin, Lane & Co., Elkhart, Indiana.

[WRITING.]

(Continued on next page.)

Classes of employes.	Unit of payment.	DATES.						
		1880.	1879.	1878.	1877.	1876.	1875.	1874.
Overseer in rag-room	Day	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00
Rag-sorter, female	do	75	75	75	75	75	75	75
Bleacher	do	1 00	1 00	1 00	1 25	1 25	1 25	1 25
Rag engineer	do	2 00	2 00	2 00	2 25	2 25	2 50	2 50
Rag engineer's helper	do	1 25	1 25	1 25	1 50	1 50	1 75	1 75
Machine-tender	do	2 75	2 75	2 75	2 75	2 75	2 75	2 50
Back-tender, boy	do	83½	83½	83½	83½	83½	83½	1 25
Cutter, girl	do	2 00	2 00	2 00	2 25	2 25	2 50	2 50
Loftman, foreman	do	1 50	1 50	1 50				
Loftman, journeyman	do	1 25	1 25	1 25	1 50	2 00	2 00	2 00
Calenderer	do	83½	83½	83½	83½	83½	83½	83½
Folder, girl	do	1 00	1 00	1 00	1 08½	1 08½	1 10½	1 10½
Fireman	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Millwright	do	1 50	1 50	1 50	2 00	2 25	3 00	3 00
Carpenter	do	1 25	1 25	1 25	1 50	1 75	1 75	1 75
Teamster (with team)	do	2 50	2 50	2 50	3 00	3 00	3 00	3 00
Laborer	do	1 25	1 25	1 00	1 00	1 00	1 50	1 50

REMARKS.—In addition to those in the table, the following rates for the classes named are given in the schedule:

Classes of employes.	Unit of payment.	DATES.						
		1880.	1879.	1878.	1877.	1876.	1875.	1874.
Duster	Day	\$1 00	\$1 00	\$1 00	\$1 25	\$1 25	\$1 25	\$1 25
Bleach-mixer	do	1 00	1 00	1 00	1 25	1 25	1 25	1 25
Size-maker	do	1 00	1 00	1 00	1 25	1 50	1 50	1 50
Superintendent of finishing department	do	2 50	2 50	2 50	3 00	3 00	3 00	3 00
Trimmer	do	2 00	2 00	2 00	2 25	2 25	2 50	2 50
Pressman	do	1 25	1 25	1 25	1 50	1 50	1 50	1 50
Helper	do	1 25	1 25	1 25	1 50	1 50	1 75	1 75
Ruler	do	2 00	2 00	2 00	2 50	2 50	3 00	3 00
Packer	do	1 25	1 25	1 25	1 50	1 50	2 00	2 00
<i>Females.</i>								
Overhauler	Day	\$0 83½	\$0 83½	\$0 83½	\$1 00	\$1 00	\$1 00	\$1 00
Sorter	do	75	75	75	75	75	75	75
Ruler	do	75	75	75	83½	83½	85½	83½
Box-tender	do	50	50	50	50	50	50	50
Stamper	do	75	75	75	75	75	75	75
Sealer	do	75	75	75	75	75	75	75
Counter	do	1 00	1 00	1 00	1 08½	1 08½	1 10½	1 10½

There are some opportunities for extra earnings by the employes in the dry-loft. These would increase regular wages very little, and have not been included in the rates given.

No allowances or privileges are given, and no employes are required to pay for implements, except carpenters, who furnish all their tools.

Erwin, Lane & Co., Elkhart, Indiana—Continued.

Overhaulers and rag-sorters are paid weekly, all other classes monthly. Payments are all in cash.

The paper-making department runs 24 hours to the day (when on full time), Sundays excepted, and the rag engineer and helpers, machine-tenders, back-tenders, and firemen work in two shifts of 12 hours each. All classes in the preparatory and finishing departments work 10 hours a day.

The mill has been in operation 11 months a year since 1874. No strikes have occurred.

No improved or labor-saving machinery has been introduced.

There has been a slight decrease in the efficiency of labor, arising from lower wages, and the fact that of late years but very few are learning the trade, and it is necessary to employ more inexperienced labor.

The selling prices of writing paper per hundred weight, for the years named, are as follows:

Year.	Fine flats.	Superior flats.	Fine ruled.	Superior ruled.
1874....	\$18 00	\$20 00	\$20 00	\$22 00
1880....	13 87	15 75	15 75	17 75

The average cost of labor on all grades is \$3 75 per hundred weight.

Wages are given as from 23 to 31 per cent. of total cost, the ratio varying with the quantity of paper produced in a year.

The trade is not regarded as unhealthful, and no serious accidents have occurred at this mill.

Ferdinand Funke, Evansville, Indiana.

[RAG AND STRAW WRAPPING.]

Classes of employes.	Unit of pay-ment.	DATES.																		
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.
Rag engineer	Day ..	\$1 10½	\$1 10½	\$1 10½	\$1 10½	\$1 10½	\$1 33½	\$1 33½	\$1 00½	\$1 83½	\$1 83½	\$1 83½	\$1 83½	\$1 00½	\$1 00½	\$1 00½	\$1 50	\$1 50	\$1 50	\$1 50
Machine-tender	do ..	1 33½	1 33½	1 33½	1 33½	1 50	1 00½	1 00½	2 00	2 10½	2 10½	2 10½	2 10½	2 00	2 00	2 00	1 00½	1 00½	1 00½	1 00½
Steam engineer	do ..	1 10½	1 10½	1 10½	1 10½	1 33½	1 50	1 50	1 00½	1 83½	1 83½	1 83½	1 83½	1 00½	1 00½	1 00½	1 50	1 50	1 50	1 50
Fireman	do ..	1 00	83½	83½	83½	83½	1 00	1 00	1 10½	1 50	1 50	1 50	1 50	1 33½	1 33½	1 33½	1 10½	1 10½	1 10½	1 10½
Teamster	do ..	83½	83½	83½	83½	83½	83½	83½	1 00	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½	1 00	1 00	1 00	1 00
Laborer	do ..	83½	1 00	1 00	1 00	1 00	1 00	1 00	1 10½	1 33½	1 33½	1 33½	1 33½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½	1 10½

REMARKS.—Monthly payments in cash are made at this mill.

The hours of labor are 10 a day.

Rag and straw wrapping paper sold at the following prices per pound for the years named:

1860.....	\$0 04	1875.....	\$0 02
1865.....	6	1880.....	3
1870.....	6		

Alvin Record, East Livermore, Maine.

[LEATHER BOARD.]

Classes of employes.	Unit of pay-ment.	DATES.									
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.
Foreman	Day ..	\$2 00	\$1 75	\$1 05	\$1 05	\$1 75	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00
Overseer in rag-room	do ..	2 00	1 75	1 40	1 40	1 50	1 75	1 75	1 75	1 75	1 75
Bleacher	do ..	2 00	1 40	1 45	1 25	1 25	1 50	1 50	1 50	1 50	1 50
Rag engineer	do ..						1 50	1 50	1 50	1 50	1 50
Rag engineer's helper	do ..	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Machine-tender	do ..	1 50	1 40	1 40	1 25	1 25	1 50	1 50	1 50	1 50	1 50
Machine-tender's helper	do ..	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Finisher	do ..	1 25	1 17	1 17	1 17	1 17	1 25	1 25	1 25	1 25	1 25
Finisher's helper	do ..	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Cutter, girl	do ..	83	83	75	75	75	83	83	83	83	83
Calenderer	do ..	1 25	1 25	1 17	1 17	1 17	1 25	1 25	1 25	1 25	1 25
Fireman	do ..	1 25	1 25	1 08	1 08	1 08	1 25	1 25	1 25	1 25	1 25
Machinist	do ..	3 00	3 00	2 50	2 50	2 50	3 00	3 00	3 00	3 00	3 00
Millwright	do ..	3 00	3 00	2 50	2 50	2 50	3 00	3 00	3 00	3 00	3 00
Carpenter	do ..	2 00	2 00	1 50	1 50	1 50	2 00	2 00	2 00	2 00	2 00
Teamster	do ..	1 25	1 17	1 17	1 08	1 08	1 25	1 25	1 25	1 25	1 25
Laborer	do ..	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—A few opportunities for over-time are afforded. These would increase regular wages from 10 to 20 cents per day, and have not been included in the above rates.

No allowances are given.

Payments, which are in cash, were monthly from 1870 to 1875; since the latter date, weekly.

Engine-tenders work 12 hours a day; all other classes 10 hours.

No increase in the efficiency of labor has been remarked.

The mill is in operation on an average 11½ months a year, the stoppage being for repairs. No strikes have ever occurred.

The selling price of leather board per pound in 1870 was 14 cents, 12 cents in 1875, and 9 cents in 1880. The labor cost is a little over 1 cent a pound, and wages are about 14½ per cent. of average total cost.

The trade is not considered unhealthful, and no accidents have occurred.

STATISTICS OF WAGES—PAPER MANUFACTURE.

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Bowdoin Paper Manufacturing Company, Topsham, Maine.

[NEWS.]

Classes of employes.	Unit of payment.	DATES					
		1880.	1870.	1878.	1877.	1876.	1875.
Foreman	Day	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00
Overseer in rag-room	do	1 75	1 75	1 75	1 75	1 75	1 75
Rag-sorter	do	70	70	70	70	70	75
Bleacher	do	1 10	1 00	1 00	1 25	1 25	1 50
Rag engineer	do	1 85	1 75	1 75	1 87	1 80	1 87
Machine-tender	do	2 20	1 75	1 75	2 12½	2 25	2 02
Machine-tender's helper	do	1 37	1 25	1 00	1 25	1 25	1 50
Finisher	do	2 00	1 75	1 75	1 75	2 00	1 75
Cutter, girl	do	93	85	85	1 00	92	92
Loftman	do	1 10	1 00	1 00	1 25	1 25	1 37
Fireman	do	1 07	1 50	1 50	1 05	1 05	1 75
Machinist	do	2 50	2 00	2 00	2 25	2 50	2 50
Millwright	do	2 50	2 50	2 50	2 50	2 50	.....
Carpenter	do	2 00	1 75	1 75	2 00	2 00	2 50
Teamster	do .....	.....	.....	.....	.....	1 50	1 50
Laborer	do	1 10	1 00	1 00	1 25	1 25	1 37

REMARKS.—There are some extra earnings from over-time at this establishment, which would increase the wages given in the table about 5 per cent.

No allowances are given.

Payments are monthly and in cash.

The mill runs night and day, all classes working 12 hours.

The establishment is in operation continuously throughout the year, and no strikes have occurred.

The selling price of news paper, which is the product of this mill, was 8½ cents per pound in 1875 and 7½ cents in 1880. Wages constituted at the former date 12½ per cent. of total cost, and at the latter date 9 per cent.

There has been a decided increase in the efficiency of labor, due to sharp competition and marked improvement in paper-making machinery, both of which have helped to cheapen the cost of manufacturing.

Carson & Brown Company, Dalton, Massachusetts.

[LINEN LEDGER.]

Classes of employes.	Unit of payment.	DATES.									
		1880.	1875.	1870.	1865.	1860.	1850.	1845.	1840.	1830.	1801.
Machine-tender	Day	\$2 25	\$2 50	\$3 00	\$3 00	\$1 33½	\$1 25	\$1 12½	\$1 10	.....	.....
Finisher	do	1 00½	2 00	2 25	2 25	1 10½	1 16½	1 00	1 00	.....	.....
Ordinary workman	do	1 00	1 25	1 50	1 50	75	91½	79	75	\$0 58½	\$0 50
Skilled workman	do	1 50	1 00½	2 00	2 00	1 00	1 10½	1 00	83½	00½	58½
Girls (a)	do	50	58½	58½	58½	33½	33½	19½	14	12½	12½
Boys (a)	do	75	1 00	1 00	1 00	25	25	21	10	10	10

a The rates given for girls from 1801 to 1880, and those for boys from 1801 to 1860, include board.

REMARKS.—There have been some opportunities for extra earnings from over-time since 1845 for girls who work by the piece.

These would increase the rates given in the above tables.

The only allowances and privileges are free board furnished to some employes, and uniform rents. The former would increase wages somewhat, and has been included in the rates named.

All payments are in cash. From 1830 to 1844, employes were paid on application; from 1845 to 1874, quarterly; in 1875 and since, monthly.

Previously to 1850 the mill ran from sunup to sundown; from 1850 to 1870 the hours of labor were 11½ in summer and 9½ in winter; since 1875, 10 hours five days in the week and 9 on Saturday.

Regarding regularity of employment, it is stated that as late as 1850 the mill was operated but from one-half to two-thirds of the year, imperfectly constructed water-wheels and low water causing the stoppages. Since then sharper competition has displaced the

old wheels and forced manufacturers to build reservoirs or resort to steam-power, and less time is lost.

There have been no strikes in the history of the mill.

Regarding selling price, it is stated that the range of prices for the same grade of paper has been from 16 to 50 cents per pound, the lowest point having been reached in 1879 and the highest in 1863-'64. Within the last 15 years the price for labor has varied from 3½ to 7½ cents per pound, and the general statement is made that wages constitute from 15 to 25 per cent. of the total cost of production.

Labor has increased in efficiency as the result of systematic planning and direction of work.

Improved machinery has been introduced in almost every department, but has effected no material change in wages.

The trade is healthful, and the only accident recorded was the partial disabling of an arm in one instance.

STATISTICS OF WAGES—PAPER MANUFACTURE.

Crocker Manufacturing Company, Holyoke, Massachusetts.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Foreman	Day	\$3 50	\$3 50	\$3 50	\$2 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50
Overseer in rag-room	do	2 50	1 75	1 75	2 00	2 00	2 50	2 50	2 50	2 50	2 50
Rag-sorter	do	90	80	90	1 00	1 00	1 25	1 25	1 25	1 25	1 25
Bleacher	do	1 37	1 35	1 25	1 50	1 50	1 75	1 75	1 75	1 75	1 75
Assistant bleacher	do	1 15	1 15	1 15	1 40	1 40	1 50	1 50	1 50	1 50	1 50
Rag engineer	do	2 25	2 00	2 25	2 25	2 25	2 75	2 75	2 75	2 75	2 75
Rag engineer's helper	do	1 25	1 15	1 15	1 25	1 25	1 50	1 50	1 50	1 50	1 50
Machine-tender	do	2 50	2 50	2 50	2 75	2 75	3 00	3 00	3 25	3 25	3 00
Machine-tender's helper	do	1 25	1 25	1 40	1 40	1 40	1 75	1 75	1 75	1 75	1 75
Finisher	do	2 25	2 00	2 00	2 50	2 50	3 00	3 00	3 00	3 00	3 00
Finisher's helper	do	1 75	1 40	1 50							
Cutter, girl	do	80	80	80	00	90	1 25	1 25	1 25	1 25	1 25
Calenderer	do	1 25	1 25	1 25	2 25	2 25					
Folder	do	1 25	90	90	90	90	1 25	1 25	1 25	1 25	1 25
Fireman	do	1 50	1 40	1 40	1 50	1 50	1 75	1 75	1 75	1 75	1 75
Millwright	do	2 75	2 50	2 75	2 75	2 75	3 25	3 25	3 25	3 25	3 00
Carpenter	do	2 25	2 50	2 00	2 25	2 25	2 75	2 75	2 75	2 00	2 00
Laborer	do	1 25	1 15	1 25	1 40	1 40	1 50	1 50	1 50	1 50	1 50

REMARKS.—Payments are monthly in cash.

Rag-room employes, carpenters and millwrights, laborers, finishers and helpers, cutter-girls and folders work 10 hours a day, all other classes 12 hours.

No strikes have occurred, and the mill is never idle.

No labor-saving machinery has been introduced.

The trade is not considered unhealthy.

The following statement regarding prices of product, etc., is given:

Year.	Selling price of paper per pound.	Cost of labor per pound of paper.	Percentage of wages to cost.
1871.....	\$0 12	\$0 01½	13
1875.....	11	1½	14
1880.....	10	1½	15

Whiting Paper Company, Holyoke, Massachusetts.

[FINE LOFT-DRIED WRITING AND LEDGER.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman	Day	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$4 00	\$4 00	\$3 25	\$3 25	\$0 00	\$0 00	\$0 00	\$0 00
Overseer in rag-room	do	2 00	1 75	2 50	1 48			2 50	2 50	2 25	2 25	2 00	2 00	2 00	1 50	2 75
Rag-sorter	do	90	90	90	1 00	1 00	1 17	1 16	1 16	1 16	1 16	1 00	1 00	1 00	1 12	1 00
Rag engineer	do	2 50	2 50	2 50	2 75	2 75	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Rag engineer's helper	do	1 35	1 35	1 35	1 50	1 50	1 75	1 75	1 75	1 07	1 07	1 50	1 50	1 50	1 50	1 50
Machine-tender	do	2 75	2 50	2 75	2 75	2 75	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	2 50
Back-tender	do	1 25	1 25	1 50	1 50	1 50	1 75	1 75	1 75	1 07	1 07	1 50	1 50	1 50	1 50	1 50
Finisher	do	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	4 00	3 50	3 50	3 00
Finisher's helper	do	1 75	1 75	1 75	2 00	2 00	2 25	2 00	2 00	2 00	2 00	1 87	1 50	1 50	1 50	1 50
Cutter, girl	do														1 00	1 00
Loftman	do	1 50	1 50	1 50	1 75	1 85	00	2 00	2 00	00	2 00	2 00	2 00	1 75	1 75	1 50
Calenderer, girl	do	90	90	90	1 00	1 00	1 00	1 00	1 00	00	1 00	1 00	1 00	1 00	1 00	1 00
Folder, girl	do	1 50	1 45	1 35	1 80	1 70	1 25	1 35	1 75	1 00	1 50	1 25	1 35	1 30	1 25	1 25
Fireman	do	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75	1 02
Machinist	do	2 35	2 35	2 35	2 50	2 50	2 75	2 75	2 75	3 00	3 00		3 00	3 00	2 75	2 75
Millwright	do														4 00	4 00
Carpenter	do	2 35	2 35	2 35												
Laborer	do	1 35	1 35	1 35	1 50	1 50	1 50	1 75	1 75	1 07	1 50	1 50	1 50	1 50	1 50	1 50

REMARKS.—Machine-tenders, loftmen, and calender-girls have occasional opportunities for making over-time, which would increase regular wages from 20 to 30 per cent. and have not been considered in making up the above rates. In the case of folders, however, the extra earnings have been included.

No allowances are given.

Payments in cash are made monthly.

Rag engineers and machine-tenders work 12 hours a day; rag-cutters 9 hours, and all others 10 hours.

There have been no strikes or lockouts.

Whiting Paper Company, Holyoke, Massachusetts—Continued.

Prices of paper per pound were as follows for the years named:

Year.	No. 1 paper, per pound.	No. 2 paper, per pound.	No. 3 paper, per pound.	Linen paper, per pound.
1866.....	\$0 36	\$0 34	.....	.....
1870.....	28	24	\$0 22	\$0 32
1875.....	24	21	19	25
1880.....	21	18	16	20

The mill was operated 12 months a year from 1865 to 1875, 11½ months from 1876 to 1879, and 12 months in the census year. The cause of idleness was on account of business depressions.

The relation of wages to cost of product is given at 25 per cent. in 1880.

Increased intellectual development has occasioned a corresponding increase in the efficiency of labor.

The Gould engine for beating and preparing half-stuff has been introduced and various machines have been improved. The former has effected an increase of production and a reduction of cost; the latter has increased production in proportion to number of employes.

Accidents seldom occur when ordinary care is observed.

Regarding the popular impression that small-pox is frequently communicated from the rags in a paper-mill, it is remarked that the disease is no more prevalent at this establishment than in communities where there are no paper-mills. The proprietor says: "At our No. 1 mill, where we cut and sort from 5 to 8 tons of rags a day, there has not been a case of small-pox in the 17 years it has been running, so that the risk of this and other diseases from the rags is considered very small."

An establishment in Massachusetts.

[PRINTING.]

Classes of employes.	Unit of payment.	DATES.								
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Foreman.....	Day	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$4 00	\$4 00	\$4 00	\$4 00
Overseer in rag-room.....	do	2 50	2 25	2 50	2 50	2 50	3 00	3 00	3 00	2 75
Rag-sorter	do	82	75	75	83	1 00	1 00	1 00	1 00	1 00
Bleacher.....	do	1 80	1 58	1 58	1 75	2 00	2 50	2 00	2 00	2 00
Assistant bleacher.....	do	1 50	1 35	1 85	1 50	1 00	1 75	.....	.....	.....
Rag engineer.....	do	2 00	1 80	1 80	2 00	2 25	2 50	2 50	2 50	2 50
Rag engineer's helper.....	do	1 44	1 31	1 31	1 45	1 00	1 00	1 00	1 75	1 00
Machine-tender.....	do	2 25	2 25	2 25	2 50	2 75	3 00	3 00	3 25	3 00
Machine-tender's helper.....	do	1 44	1 31	1 31	1 45	1 00	1 75	1 75	1 75	1 75
Back-tender.....	do	1 44	1 31	1 31	1 45	1 00	1 75	1 75	1 75	1 75
Finisher.....	do	2 25	2 03	2 03	2 25	2 50	2 75	2 75	2 75	2 75
Cutter, girl.....	do	1 00	90	90	1 00	1 10	1 10	1 25	1 25	1 10
Calenderer.....	do	1 50	1 50	2 03	2 25	2 50	3 00	3 00	3 00	3 00
Folder.....	do	1 00	90	90	1 00	1 10	1 10	1 25	1 25	1 10
Fireman.....	do	1 58	1 35	1 35	1 00	1 00	1 00	2 00	2 00	2 00
Machinist.....	do	3 00	2 93	2 93	3 25	3 25	3 50	3 50	3 25	3 00
Millwright.....	do	3 00	2 70	2 70	2 75	3 00	3 25	3 25	3 00	3 00
Carpenter.....	do	2 25	2 03	2 03	2 25	2 50	2 50	.....	.....	.....
Teamster.....	do	1 50	1 50	1 50	1 50	1 50	1 50	.....	.....	.....
Laborer.....	do	1 20	1 12½	1 12½	1 25	1 40	.....	1 75	1 75	1 50

REMARKS.—There are a few opportunities for over-time work, which have not been considered in the above table.

To some classes of skilled labor a percentage on goods produced over a certain quantity is granted. This would in some instances increase the table price from 10 to 25 per cent.

Payments are monthly and in cash.

The following statement is furnished regarding prices of stock, chemicals, etc., per 100 pounds, averaged on prices at the beginning of each quarter:

Articles.	1882.	Feb. 1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Bleach.....	\$1 10	\$2 00	\$1 25	\$1 25	\$1 65	\$1 75	\$2 50	\$2 11	\$3 31	\$4 80
Soda-ash.....	1 00	2 18½	1 00	1 62	2 12	2 37	2 37	2 75	3 10	4 12
Porous alum.....	2 02	2 62½	2 62	3 03	3 25	3 31½	3 37	3 37	3 37	3 39
Cotton-waste.....	2 75	3 50	2 00	2 00	2 62½	2 62½	2 75	2 50	3 75	3 75
Domestic colored rags.....	2 00	3 50	2 00	2 27	2 53	2 78	3 00	3 00	3 25	3 25
Selected white rags.....	3 75	5 25	3 41	3 69	4 50	5 25	6 00	6 00	6 50	6 50
Wood-pulp.....	2 25	4 00	3 00	3 25	3 50	4 00	4 00	4 50	5 00	5 00

a Delivered.

Machine-tenders, engineers, and fireman work 11 hours a day; all other classes 10 hours.

There have been no strikes or lockouts, and the mill runs 12 months a year.

Regarding the efficiency of labor, the statement is made that labor is always more efficient when wages are low.

Appended is a statement giving the prices of paper of the several grades named, per 100 pounds:

Grades.	1882.	Feb. 1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Book, S. S. O.....	\$3 50	\$12 50	\$9 25	\$10 75	\$13 37	\$15 00	\$15 00	\$10 00	\$18 00	\$18 00
Book, M. F.....	7 50	10 50	7 50	8 62	9 75	10 25	11 00	14 00	15 00	15 00
Common news.....	6 00	9 00	6 00	6 87	8 50	9 00	9 62	10 75	12 00	12 00

Wages are from 15 to 30 per cent. of the total cost of the various grades of printing paper in the census year. About 25 per cent. of the cost of common printing paper is labor.

Some improved machinery has been introduced which has increased production.

Paper-making is not considered dangerous or unhealthful.

[illegible]

STATISTICS OF WAGES—PAPER MANUFACTURE.

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An establishment in Massachusetts—Continued.

REMARKS.—There are a few opportunities for extra earnings, employes working in the place of absentees.
No allowances or privileges are given.

Payments, which are in cash, were monthly from 1865 to 1870, since which time they have been weekly.

Machine-tenders and back-tenders, engineers and helpers, and firemen work 11 hours a day; machinists, laborers and carpenters, rag-sorters, etc., 10 hours.

From 1860 to 1865 the establishment was operated 10½ months a year; from 1865 to 1880, 11 months. The chief cause of idleness each year has been low and high water, though there have been occasional delays for repairs.

No strikes have occurred.

Paper-making is considered neither dangerous nor unhealthful.

The following statement regarding prices, labor cost, and percentage of wages to cost is given:

Year.	Selling price.	Labor cost.	Percentage of wages to cost.
			Per cent.
1865.....	\$0 20		
1870.....	20	\$0 01 ³ / ₈	17
1875.....	15	1 ¹ / ₂	16
1880.....	9	1 ¹ / ₂	13

It is stated that the difference in the price of labor per pound of paper comes from increased product rather than from decrease in price of labor.

An establishment in Massachusetts.

[NEWS AND BOOK.]

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Foreman	Day ...	\$10 00	\$10 00	\$10 00	\$10 00	\$10 00	\$10 00	\$10 00	\$8 00
Overseer in rag-room	do ...	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 60
Bleacher	do ...	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Assistant bleacher	do ...	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Rag engineer	do ...	1 05	1 05	1 05	1 05	1 75	1 80	1 90	2 00
Rag engineer's helper	do ...	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Machine-tender	do ...	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25
Finisher	do ...	2 00	1 75	1 75	1 75	1 75	1 75	2 00	2 00
Cutter, girl	do ...	80	80	80	80	80	80	80	80
Laborer	do ...	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25

REMARKS.—Payments are monthly and in cash.

The mill runs 11½ months a year. No strikes have taken place.

There has been no change in the efficiency of labor.

The trade is considered remarkably healthful.

An establishment in Massachusetts.

[LEDGER AND RECORD.]

Classes of employes.	Unit of payment.	DATES.															
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.
Foreman	Day ...	\$5 00		\$3 50		\$3 50				\$3 00							
Overseer in rag-room	do ...	3 00		2 50		3 00				2 50							
Rag-sorter	do ...	1 00		1 00						1 00			\$0 80				
Bleacher	do ...	1 50		1 25		1 50				1 75			1 37½				
Assistant bleacher	do ...	1 00				1 00				1 50							
Rag engineer	do ...	2 00		1 75		2 50				2 00			1 75				\$1 00½
Rag engineer's helper	do ...			1 25		1 25				1 25							
Machine-tender	do ...	2 25		2 25		2 75				2 50			1 75				2 00
Machine-tender's helper	do ...	1 50		1 50		1 50				1 50			1 37½				50
Back-tender	do ...	1 25		1 25		1 25											
Finisher	do ...	1 75		1 75		1 75				1 60			2 50				1 66½
Finisher's helper	do ...	1 00		1 25		1 50							2 00				
Cutter, girl	do ...			1 00		1 00				1 00							
Loftman	do ...	1 50		1 50		1 00				1 60							
Calenderer	do ...	1 00		1 00		1 12							90				
Folder	do ...					1 12				1 00			90				
Steam engineer	do ...	2 00		2 00		2 00											
Steam engineer's helper	do ...	1 00		1 50		1 50				1 50			1 50				1 50
Fireman	do ...	1 75		1 75		1 75				1 50			2 00				1 75
Millwright	do ...	2 25		2 25		2 75				2 75			1 75				1 50
Carpenter	do ...	1 75		1 50		2 00				1 75			1 50				1 50
Teamster	do ...	1 50		1 50		1 75				1 50			1 50				
Laborer	do ...	1 25		1 25		1 50				1 50			1 50				

REMARKS.—There is but little opportunity for extra earnings at this mill.

Employes are furnished with good houses and gardens at from one-half to one-third full rent, a consideration which would benefit them to the amount of about 25 cents a day.

Cash payments are made monthly.

Engineers and machine and boiler hands work 12 hours a day; all other classes, 10 hours.

Employment is constant.

STATISTICS OF WAGES—PAPER MANUFACTURE.

An establishment in Michigan.

[BOOK AND NEWS.]

Classes of employes.	Unit of payment.	DATES.													
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Foreman	Day	\$6 30	\$6 30	\$6 00	\$6 00	\$6 00	\$6 00	\$6 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$1 00
Overseer in rag-room	do	1 83½	1 83½	1 83½	1 83½	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Rag-sorter	do	66½	66½	66½	66½	66½	66½	58½	58½	58½	66½	83½	83½	83½	83½
Bleacher	do	1 50	1 50	1 50	1 50	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½
Assistant bleacher	do	1 50	1 50	1 50	1 50	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 50	1 50	1 50	1 50
Rag engineer	do	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½	2 00	2 00	2 00	2 00	2 00	2 00
Rag engineer's helper	do	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 50	1 50	1 50	1 50
Machine-tender	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	2 50- 2 75	2 50- 2 75	2 50- 2 75	2 50- 2 75
Machine-tender's helper	do	1 50	1 83½	1 83½	1 16½	1 16½	1 16½	1 00	1 00	1 00	1 00	83½	83½	00½	00½
Back-tender	do	00½	66½	66½	50	50	50	50	50	50	50	50	50	50	50
Finisher	do	2 25	2 50	2 50	2 50	3 00	3 00	3 00	3 00	3 00	3 00	3 00	2 50	2 00	2 00
Finisher's helper	do	1 16½	1 10½	1 10½	1 00	1 00	1 00	83½	83½	83½	83½	83½	83½	83½	83½
Cutter, girl	do	83½	83½	83½	83½	83½	83½	83½	83½	83½	83½	83½	83½	83½	83½
Steam engineer	do	1 42	1 42	1 42	1 42	1 42	1 42	1 42	1 42	1 42	1 42	1 50	1 50	1 50	1 50
Steam engineer's helper	do	1 00	1 00												
Millwright	do	2 50	2 50	2 50	2 25	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Teamster	do	2 50	2 50	2 50	2 50	2 50	3 00	3 00	3 00	3 00	3 00	3 33½	3 33½	3 33½	3 33½
Laborer	do	1 25- 1 00½	1 25- 1 00½	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 50

REMARKS.—There are frequent opportunities for extra earnings in filling the places of absent employes. These would increase regular wages but slightly, and have not been included in the table. Steam engineers and helpers work 7 days a week.

There are some allowances. These are, low rent to those living in company's houses, and fuel at cost, and have not been included in the above rates.

Employes are paid weekly and in cash.

Steam engineers and helpers, machine-tender and helper, rag engineer and helper, and cutter work 12 hours a day; all other classes 10 hours. The opinion is expressed that night-work is not necessarily injurious.

The works have been in operation 12 months a year, except in 1872 and 1873, when some time was lost in rebuilding the mill after a fire and repairing the dam, which was washed out. No labor disputes have taken place.

Improved machinery has been introduced, which has increased the output in proportion to skilled labor from 40 to 100 per cent., and has necessitated an increase in common labor to handle the increased product.

The following table gives the selling price, labor cost, and percentage of wages to cost of book and news paper:

Year.	SELLING PRICE.		Labor cost of news and book paper per 100 pounds.	Percentage of wages to cost of news and book paper.
	News paper, per 100 pounds.	Book paper, per 100 pounds.		
1867	\$13 50	None made.		Per cent.
1870	18 50	do	\$1 50	10.7
1875	6 50	\$8 00	1 45	25.0
1880	7 50	9 00	1 25	23.3

There has been no change in the efficiency of labor.

This manufacturer considers the trade somewhat unhealthful, as some of the rooms are warm and some wet, some filled more or less with steam, and others dusty. There is also the liability to accidents which usually attends the manipulation of heavy machinery, boilers, etc.

Lancaster Manufacturing Company, Lancaster, New Hampshire.

[STRAW, MANILA, AND TISSUE.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.																
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.
Foreman	Day				\$2 00	\$2 25	\$2 50	\$3 84½	\$3 84½	\$3 84½	\$3 84½	\$2 50	\$2 50	\$2 50	\$2 00	\$2 00	\$2 00	\$2 00
Bleacher	do	\$1 25	\$1 12½		1 50	1 50	1 75	1 50	1 75	1 75	1 75	1 50	1 50	1 50	1 50	1 25	1 25	1 25
Assistant bleacher	do	1 25	1 12½		1 50	1 50	1 50	1 50	1 75	1 50	1 50		1 50	1 50	1 50	1 25	1 25	1 25
Rag engineer	do	1 25	1 12½		1 50	1 50	1 50	1 50	2 00	1 50	1 50	1 50	1 50	1 50	2 00	1 75	1 75	1 75
Machine-tender	do	2 00	1 50		2 00	2 25	2 50	1 75	2 50	2 50	2 50	2 50	2 50	2 50	2 50	1 50	1 50	1 50
Finisher	do	1 50	1 25		1 50	1 50	1 75	2 00	2 00	1 75	1 75	2 00	2 00	2 00	2 25	1 50	1 50	1 50
Cutter boy	do	1 00	65		65	65	60	60	75	75	75	50	50	50	50	50	50	50
Steam engineer	do							1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Fireman	do							1 00	1 00	1 10	1 10	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Carpenter	do												2 00	2 00	2 75	2 50	2 50	2 50

REMARKS.—Cash payments are monthly, or weekly if requested.
This firm has never experienced any labor difficulties.
Selling prices are given as follows:

The works were in operation almost constantly from 1864 to 1870; about 8 months a year from 1873 to 1877; did not run in 1878; 6 months in 1879, and 8 months in 1880. The causes of irregularity have been light demand, and want of straw for material.

Some labor-saving machinery has been introduced, notably an apparatus for unloading bleach-tubs, with the aid of which a man can perform a task in three-fourths of an hour which would otherwise take him a day.

The trade is not considered dangerous or unhealthful. But one accident is recorded, and that was the result of carelessness.

No increase in the efficiency of labor has been noticed.

[NEWS AND BOOK.]

Classes of employes.	Unit of payment.	DATES.						
		1880.	1879.	1878.	1877.	1876.	1875.	1874.
Foreman	Day	\$3 20+	\$3 20+	\$3 20+	\$3 20+	\$3 20+	\$3 20+	\$3 20+
Overseer in rag-room	do	1 65	1 65	1 05	1 05	1 80	1 80	1 80
Rag-sorter	do	70	70	70	70	75	75	75
Bleacher	do	1 35	1 35	1 35	1 35	1 50	1 50	1 50
Rag engineer	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Rag engineer's helper	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Machine-tender	do	2 25	2 25	2 25	2 25	2 50	2 50	2 50
Machine-tender's helper	do	1 25	1 25	1 25	1 25	1 35	1 35	1 35
Finisher	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Finisher's helper	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Cutter, girl	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Fireman	do	1 25	1 25	1 25	1 25	1 35	1 35	1 35
Carpenter	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Teamster	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Laborer	do	1 00	1 00	1 00	1 00	1 25	1 25	1 25

The return states that the book and news paper of their manufacturing bring about the same price; this was 9 cents per pound

in 1875 and 7 cents in 1870. The cost of labor is given as $1\frac{1}{2}$ cent in 1875 and $\frac{1}{4}$ of a cent in 1880.

Labor has not increased in efficiency.

Some improvements have been made in machinery, securing greater speed and increased production, the output having increased from 3,000 pounds in 1874 to 10,000 pounds in 1882, with but 50 per cent. increase in the total cost of labor.

The trade is considered neither dangerous nor unhealthful.

[MANILA.]

[Continued on next page.]

[illegible]

STATISTICS OF WAGES—PAPER MANUFACTURE.

An establishment in New Jersey—Continued.

REMARKS.—As the mill runs night and day, with two sets of hands, there are no opportunities for over-time except for machinists and carpenters, by whom repairs are occasionally made on Sundays and holidays. For this regular rates are paid.

The allowances are free houses to all employes, use of garden, and facilities for keeping cows and live stock. These have not been considered in making up the rates.

Previous to 1865 store-orders were used, but at that date the system of weekly payments in cash was adopted, which was found to be vastly more convenient and satisfactory to the men.

All classes work 10 hours a day.

It is stated in the schedule that this mill is in constant operation except in July, August, and September, when in some years there are occasional stoppages on account of limited supply of water for motive power.

It is stated that the hands are generally very healthy and are not unusually exposed to danger of accident, only two deaths from natural causes having occurred in 19 years.

There has never been any thing in the nature of a strike or lock-out at this establishment.

The following are given as the prices and labor cost of manila paper for the years named:

Year.	SELLING PRICE PER POUND.		LABOR COST PER POUND.
	Drab.	Cream.	
1865.....	\$0 25	\$0 28	\$0 01½
1870.....	15	10	1½
1875.....	12	13	1½
1880.....	11	12	1½

Though no considerable novelties in labor-saving machinery devices have been brought into use, an improvement in the quality of the machinery has taken place, which has increased the output 50 per cent. in proportion to the machinery in hand.

Niagara Falls Paper Manufacturing Company, Niagara Falls, New York.

[PRINTING.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1860.	1868.	1867.	1860.
Foreman.....	Day....	\$8 00	\$8 00	\$8 00	\$8 00	\$8 00	\$8 00	\$8 00	\$8 00	\$8 00	\$8 00	\$8 00	\$5 00	\$5 00	\$5 00	\$5 00
Overseer in rag-room.....	do....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Bleacher.....	do....	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 50	1 50	1 50	1 50
Assistant bleacher.....	do....												1 00	1 00	1 00	1 00
Rag engineer.....	do....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 25	1 25	1 25	1 25
Rag engineer's helper.....	do....	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	87½	87½	87½	87½
Machine-tender.....	do....	2 00	2 00	2 00	2 00	2 00	2 20	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Machine-tender's helper.....	do....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 25	1 25	1 25	1 25
Finisher.....	do....	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Cutter, girl.....	do....	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Loftman.....	do....	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Folder.....	do....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Fireman.....	do....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75	1 75	1 75
Machinist.....	do....	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 00	2 00	2 00	2 25	2 00	2 00
Millwright.....	do....	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 00	2 00	2 00	2 00	2 00	2 00
Carpenter.....	do....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75
Teamster.....	do....	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Laborer.....	do....	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25

Classes of employes.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Foreman.....	Day....	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$3 00	\$3 00	\$3 00	\$3 00
Overseer in rag-room.....	do....	2 00	2 00	2 00	1 75	1 75	1 75	2 00		2 12½	2 12½	2 00	2 00	2 00	2 12½	2 12½
Bleacher.....	do....	1 50	1 50	1 50	1 50	1 50	1 50	1 50		1 50	1 50	1 50	1 50	1 50	1 50	1 50
Assistant bleacher.....	do....	1 00	1 00	1 00	1 00	1 00	1 00	1 00		1 00	1 00	1 00	1 00	1 00	1 00	1 00
Rag engineer.....	do....	1 25	1 25	1 25	1 25	1 25	1 25	1 25		1 25	1 25	1 25	1 25	1 25	1 25	1 25
Rag engineer's helper.....	do....	87½	87½	87½	87½	87½	87½	1 00		1 00	1 00	1 00	1 00	1 00	1 00	1 00
Machine-tender.....	do....	2 00	2 00	2 00	1 75	1 75	1 50	1 50		1 50	1 50	1 50	1 50	1 50	1 50	1 50
Machine-tender's helper.....	do....	1 25	1 25	1 25	1 12½	1 12½	1 00	1 00		1 00	1 00	1 00	1 00	1 00	1 00	1 00
Finisher.....	do....	1 75	1 75	1 75	1 50	1 50	1 50	1 50		1 50	1 50	1 50	1 50	1 50	1 50	1 50
Cutter, girl.....	do....	75	75	75	75	75	75	02½		02½	02½	02½	02½	02½	02½	02½
Loftman.....	do....	1 25	1 25	1 25	1 12½	1 00	1 00	1 00		1 00	1 00	1 00	1 00	1 00	1 00	1 00
Folder.....	do....	1 00	1 00	75	75	75	75	02½		02½	02½	02½	02½	02½	02½	02½
Fireman.....	do....	1 75	1 75	1 75	1 50	1 50	1 50	1 50		1 50	1 50	1 50	1 50	1 50	1 50	1 50
Machinist.....	do....	2 00	2 00	2 00	2 00	1 75	1 75	1 75		1 75	1 75	1 75	1 75	1 75	1 75	1 75
Millwright.....	do....	2 00	2 00	2 00	2 00	1 75	1 75	2 00		2 00	2 00	2 00	2 00	2 00	2 00	2 00
Carpenter.....	do....	1 75	1 75	1 75	1 75	1 75	1 75	1 75		1 75	1 75	1 75	1 75	1 75	1 75	1 75
Teamster.....	do....	1 75	1 75	1 75	1 75	1 75	1 75	1 50		1 50	1 25	1 25	1 25	1 25	1 25	1 25
Laborer.....	do....	1 25	1 00	1 00	1 00	1 00	1 00	1 00		1 00	75	75	75	75	75	75

Niagara Falls Paper Manufacturing Company, Niagara Falls, New York—Continued.

REMARKS.—The only allowance mentioned is a free house to overseer, which has not been considered in making up the wages tables.

Hands on day and night turns work 12 hours out of 24; ordinary day hands, 10 hours. The proprietors consider the question of hours of labor an important one, and think that any legislation looking to change should be deliberate, giving the manufacturers an opportunity to readjust their calculations.

No strikes have occurred, attempts at such disturbances having been crushed by discharging the agitators.

The prices of printing paper per pound are given for every fifth year since 1855, as follows:

1855.....	\$0 11	1870.....	\$0 09
1860.....	9	1875.....	9
1865.....	15	1880.....	8½

There has been a decrease in the efficiency of labor, arising from the introduction of foreign workmen.

Payments are weekly.

Frank Gilbert, Mohawk and Hudson Paper Mill, Waterford, New York.

[PRINTING.]

Classes of employes.	Unit of payment.	DATES.								
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Foreman	Day	\$0 15½	\$3 40	\$3 40	\$3 84½	\$3 84½	\$3 84½	\$3 07½	\$3 07½	\$3 07½
Overseer in rag-room	do	1 50	1 50	1 50	1 00½	1 00½	1 00½	1 50	1 50	1 50
Rag-sorter	do	1 00	83½	83½	1 00	1 00	1 00	1 00	1 00	1 00
Bleacher	do	1 75	1 00	1 00	1 00½	1 00½	1 00½	1 50	1 50	1 50
Rag engineer	do	2 33½	2 00	2 00	2 25	2 25	2 25	2 00	2 00	2 00
Rag engineer's helper	do	1 50	1 25	1 25	1 50	1 50	1 50	1 25	1 25	1 25
Machine-tender	do	2 00½	2 50	2 50	2 00½	2 00½	2 00½	2 50	2 50	2 50
Machine-tender's helper	do	1 50	1 25	1 25	1 00½	1 00½	1 00½	1 50	1 50	1 50
Finisher	do	3 00	2 00	2 00	2 25	2 25	2 25	2 00	2 00	2 00
Finisher's helper	do	2 00								
Cutter, girl	do	1 10	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Loftman	do	1 50	1 25	1 25	1 50	1 50	1 50	1 25	1 25	1 25
Fireman	do	1 75	1 00	1 00	1 00	1 00	1 00	1 50	1 50	1 50
Machinist	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Carpenter	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Teamster	do	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½	1 00½
Laborer	do	1 50	1 25	1 25	1 50	1 50	1 50	1 25	1 25	1 25

REMARKS.—Payments have always been in cash and every two weeks.

The hours of labor are 10 for day hands and 12 for night hands, the gangs changing at 7 a. m. and 6 p. m., and working at night one week, and in daytime the next.

The works have been in constant operation since their establishment. No strikes have occurred.

Printing paper sold in 1872 for 13 cents, in 1874 for 12 cents, in 1876 for 8 cents, in 1878 for 6 cents, and in 1880 for 7 cents; the

percentage of wages to cost being 25, 20, 20, 22, and 18 per cent. for the years named, respectively.

There has been no change in the efficiency of labor.

Some new machinery has been adopted.

This manufacturer considers the popular impression that contagious diseases are liable to be contracted from rags an erroneous one, his experience having led him to the belief that paper-making is a very healthful occupation.

Knowlton Brothers, Watertown, New York.

[BOOK AND COLORED.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.												
		1881.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Foreman	Day	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$4 00	\$4 00	\$4 00		
Overseer in rag-room	do	1 00	1 00	1 00	1 80	1 80							\$1 50	\$1 50
Rag-sorter	do	07	73	73	73	73	73	73	80	80	80	80	75	75
Bleacher	do	1 50	1 50	1 50	1 50	1 50	1 70			1 75		1 75		
Rag engineer	do	2 20		2 00		2 00		2 00		2 03		2 00	1 75	1 75
Rag engineer's helper	do	1 40	1 40	1 40		1 40		1 50		1 75		1 50	1 50	1 50
Machine-tender	do	2 20		2 00		2 25		2 00		3 00		3 00	2 75	2 75
Back-tender	do	1 25	1 25	1 10		1 00	1 00	1 00						
Finisher, male	do	2 00		2 00		2 03		2 00		3 00		3 00	2 50	2 50
Finisher, female	do	80		80		85		85		1 00		1 00	80	80
Cutter, girl	do	75	75	75		75		85		85		85		
Loftman	do									2 03		2 00	1 75	1 75
Calenderer	do									1 00		1 00	80	80
Folder	do	1 00	1 00	1 00		85		85		1 00		1 00	80	80
Fireman	do	1 00		1 00		1 75		1 75		2 00			1 50	1 50
Carpenter	do	2 00	1 80	1 80		1 80		2 00		2 00				
Laborer	do	1 25	1 25	1 13		1 25		1 50		1 75		1 50	1 50	1 50

STATISTICS OF WAGES—PAPER MANUFACTURE.

Knowlton Brothers, Watertown, New York—Continued.

Classes of employes.	Unit of payment.	DATES.												
		1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.
Foreman.....	Day.....													
Overseer in rag-room.....	do.....	\$1 50	\$1 50	\$1 50	\$1 25	\$1 13	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00
Rag-sorter.....	do.....	70	70	70	70	65	60	50	40	40	45	50	50	50
Bleacher.....	do.....									1 00	1 00	1 00	1 00	1 00
Rag engineer.....	do.....	1 75	1 75	1 87	1 60	1 83	1 25	1 00	1 13	1 13	1 00	1 25	1 25	1 25
Rag engineer's helper.....	do.....	1 50	1 50	1 50	1 25	1 13	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Machine-tender.....	do.....	2 75	2 50	2 50	2 00	1 50	1 50	1 25	1 50	1 50	1 25	1 50	1 25	1 25
Back-tender.....	do.....													
Finisher, male.....	do.....	2 25	1 75	1 75	1 50	1 83	1 25	1 25	1 25	1 13	1 00	1 25	1 25	1 25
Finisher, female.....	do.....	75	80	70	70	65	60	50	50	50	55	60	60	60
Cutter, girl.....	do.....													
Loftman.....	do.....	2 00	1 75	2 00	1 50	1 25	1 13	1 00	1 13	1 13	1 00	1 25	1 25	1 25
Calenderer.....	do.....	75	80	70	70	65	60	50	50	50	55	60	60	60
Folder.....	do.....	75	80	70	70	65	60	50	50	50	55	60	60	60
Fireman.....	do.....	1 50	1 50	1 50	1 25	1 13	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Carpenter.....	do.....													
Laborer.....	do.....	1 50	1 50	1 50	1 25	1 13	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—The schedule appended to this return states that the opportunities for extra earnings from over-time at this mill are so few as not to be worthy of consideration, except in the case of the fireman, who works seven days a week.

No allowances or privileges are given to employes.

Up to 1854, store-orders were used in part payment; since that time all cash has been paid monthly. The immediate cause of the change in method of payment was a change in the firm and separation of the different branches of the business.

The principal machinery in the mill runs night and day, and for that portion of the work two sets of hands are employed, working 12 hours each. The work in the rag-room is commonly piece-work, and if the mill is supplied with rags the managers do not require the girls to work any regular number of hours; consequently the

hours in this department change with the season and the diligence of the employe, varying from 8 to 10 a day. Loftmen and finishers work 10 hours.

The mill has not been shut down since 1824, except for repairs and rebuilding, but it was not run very regularly from 1857 to 1861. Since that date there has been no stop except for alterations. No strikes have taken place.

Regarding selling price, it is stated that from 1808 to 1854 all kinds of paper were manufactured at this mill; from 1854 to 1873, mainly writing paper; and since the latter date book and colored paper; and it therefore is not possible to give prices on the same kind of product for the term of years. The following table gives the selling prices and labor cost per pound and percentage of wages to cost of the chief articles of product from 1860:

Year.	SELLING PRICES.			LABOR COST.			PERCENTAGE OF WAGES TO COST.		
	Book paper.	Colored paper.	Flat writing paper.	Book paper.	Colored paper.	Flat writing paper.	Book paper.	Colored paper.	Flat writing paper.
1860.....			\$0 10 to \$0 20				Per cent.	Per cent.	Per cent.
1862.....						\$0 01 $\frac{7}{10}$			10
1863.....						2 $\frac{1}{10}$			
1865.....			30 to 38			2 $\frac{8}{10}$			8
1870.....			20 to 22			2 $\frac{6}{10}$			12 $\frac{1}{2}$
1873.....			18 to 20						
1875.....	\$0 11 to \$0 12	\$0 13		\$0 01 $\frac{2}{10}$	\$0 01 $\frac{3}{10}$		10	10	
1880.....	8	9		1 $\frac{1}{10}$	1 $\frac{2}{10}$		12 $\frac{1}{2}$	12 $\frac{1}{2}$	

It is stated in this return that there has been no increase in the efficiency of labor, except that, as machinery has been introduced, men have acquired the quickness and attention necessary to its management.

The introduction of labor-saving machinery began about 1832, and continued improvements have since been made. The effect of these additions and improvements has been so to increase the speed and power of the machinery that an amount of manual labor which

prior to 1830 would have produced one ton of paper will now produce ten tons.

The trade is not considered dangerous or unhealthful by the operatives. It is remarked here, as by other paper-manufacturers quoted, that the popular impression regarding danger of infection from rags is exaggerated, there having been but two or three instances of contagious diseases so contracted in an experience of twenty years. It is also stated that it is practically impossible to disinfect all rags.

Taggarts & Davis, Watertown, New York.

[PRINT AND ROPE.]

Classes of employes.	Unit of payment.	DATES.													
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Foreman	Day	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	.....	.....	.....	.....	\$2 88	\$3 84	\$3 84	\$3 84
Rag-sorter	do	75	75	75	75	75	75	.....	.....	.....	.....	75	75	75	75
Bleacher	do	1 25	1 25	1 25	1 25	1 25	1 25	.....	.....	.....	.....	1 25	1 25	1 25	1 25
Assistant bleacher	do	1 00	1 00	1 00	1 00	1 00	1 00	.....	.....	.....	.....	1 00	1 00	1 00	1 00
Rag engineer	do	2 00	2 00	2 00	2 00	2 00	2 00	.....	.....	.....	.....	2 25	2 25	2 25	2 25
Rag engineer's helper	do	1 50	1 50	1 50	1 50	1 50	1 50	.....	.....	.....	.....	1 50	1 50	1 25	1 25
Machine-tender	do	2 00	2 00	2 00	2 00	2 00	2 00	.....	.....	.....	.....	2 50	2 50	2 25	2 25
Machine-tender's helper	do	1 50	.....	.....	.....	.....	1 50	.....	.....	.....	.....	1 50	1 50	1 38	1 25
Cutter, rope	do	1 50	.....	.....	.....	.....	1 50	.....	.....	.....	.....	1 50	1 50	1 50	1 50
Cutter, rag	do	1 75	.....	.....	.....	.....	1 50	.....	.....	.....	.....	1 50	1 50	1 50	1 50
Folder	do .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75	75	75	.....
Steam engineer's helper	do	1 00	1 00	1 00	1 00	1 00	1 00	.....	.....	.....	.....	1 00	1 00	1 00	1 00
Fireman	do	1 75	1 50	1 50	1 50	1 50	1 50	.....	.....	.....	.....	1 50	1 50	1 50	1 50
Machinist	do	2 50	2 25	2 25	2 25	2 25	2 25	.....	.....	.....	.....	2 00	2 00	2 00	2 00
Millwright	do	2 00	2 00	2 00	2 00	2 00	2 00	.....	.....	.....	.....	2 00	2 00	2 00	2 00
Carpenter	do	2 00	2 00	2 00	2 00	2 00	2 00	.....	.....	.....	.....	2 00	1 75	1 75	1 75
Teamster	do	1 50	1 50	1 50	1 50	1 50	1 50	.....	.....	.....	.....	1 50	1 50	1 50	1 50
Laborer	do	1 25	1 25	1 25	1 25	1 25	1 25	.....	.....	.....	.....	1 25	1 25	1 25	1 25

REMARKS.—The products of this mill are printing paper, wood-pulp, and rope paper, the latter being manufactured into flour-sacks.

There are in warm weather occasional opportunities for extra earnings by those who have trades. These would considerably increase the rates given in the table.

Employes are provided by the company with houses and garden at very low rates, a consideration which would increase their regular wages about \$1 a week, and has not been taken into account in the above table.

The men are paid monthly and the women weekly. All payments are in cash.

The hours of labor are 12 a day for mill hands, their department running night and day, and 10 hours in summer and 9 in winter for other classes.

There has been an increase in the efficiency of labor, arising from experience.

The mill is in constant operation except Sunday, having lost only three months, since 1866. But two holidays are observed—Fourth of July and Christmas. There have been no strikes.

The actual cost of labor for making rope and printing paper since 1870 has been \$20 a ton; the cost of making wood-pulp has been \$7 a ton.

Some labor-saving machinery has been introduced. From 20 to 25 girls were formerly required to make the number of flour-sacks which are now made by machinery by the aid of 2 girls, and from 75 to 200 sacks can be made per minute on 6 machines.

The effect of these improvements, however, has not been to decrease the number of employes, but to increase production.

The employes are generally healthy. But two cases of small-pox have occurred since the establishment of this mill, one of which proved fatal. The only safety in a paper-mill is proper vaccination of all operatives.

An establishment in the state of New York.

[WALL.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Foreman	Day	\$4 00	\$4 00	\$4 00	\$4 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$4 00
Overseer in rag-room	do	2 00	1 50	1 25	1 37½	1 62½	1 62½	1 75	1 75	1 75	2 00
Rag-sorter	do	75	75	75	75	75	75	75	75	75	75
Bleacher	do	1 25	1 37½	1 37½	1 25	1 62½	1 62½	1 62½	1 75	1 75	1 75
Rag engineer	do	1 50	1 50	1 75	1 75	2 00	2 00	2 00	2 25	2 12	2 12
Rag engineer's helper	do	1 25	1 25	1 25	1 25	1 50	1 50	.....	.....	.....	.....
Machine-tender	do	2 25	2 25	2 25	2 25	2 50	2 50	2 50	2 50	2 50	2 50
Back-tender	do	1 25	1 00	.....	.....	.....	.....	.....	.....	.....	.....
Finisher	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Fireman	do	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 75
Carpenter	do	1 75	1 50	1 75	1 75	2 00	2 00	2 00	2 00	2 50	2 50
Teamster	do	1 25	1 25	1 25	1 25	1 50	1 50	1 50	2 00	2 13	2 00

REMARKS.—This firm manufactures wall paper.

There are no opportunities for extra earnings from over-time, and no allowances that would increase the rates are given.

Payments are monthly and in cash.

Tour-men work 12 hours a day; day-men, 10 hours.

From 1857 to 1860 the mill averaged but 5½ months a year, the cause of irregularity being due to the nature of the business. The

product was straw boards, which were dried in the open air, and this operation could be carried on only a part of the year. From 1861 to 1865 the mill was operated 10½ months a year, regularity being interfered with by the war. Since 1866 employment has been constant.

There has never been a strike or a lockout at these works.

There has been no change in the efficiency of labor.

STATISTICS OF WAGES—PAPER MANUFACTURE.

An establishment in the state of New York—Continued.

Regarding prices of product, labor cost, and relation of wages to cost, the statement is as follows:

Year.	Selling price of paper per ton.	Labor cost per ton.	Relation of wages to cost.
1875.....	\$210 00	\$16 50	8 $\frac{1}{2}$
1880.....	145 00	14 00	10 $\frac{1}{2}$

The only employes required to furnish their own tools are carpenters. This has not been considered in making up the rates in the table.

Some labor-saving machinery has been introduced from time to time.

The opinion here given regarding accidents, etc., is that no more danger attends this trade than others where machinery and belts are used, and that there is nothing detrimental to health in the business except the inhaling of chlorine gas. This company, however, has never lost any men from this cause.

Mead & Nixon Paper Company, Dayton, Ohio.

[BOOK AND NEWS.]

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Superintendent	Month....	\$200 00	\$175 00	\$200 00	\$200 00	\$200 00	\$200 00	\$200 00	\$200 00
Overseer in rag-room	Day	2 50	1 50	1 87 $\frac{1}{2}$	2 00	2 00	2 25	2 25	2 25
Rag engineer	do	2 00	1 35	1 50	1 75	1 87 $\frac{1}{2}$	1 87 $\frac{1}{2}$	1 87 $\frac{1}{2}$	2 00
Rag engineer's helper	do	1 25	90	1 00	1 25	1 35	1 35	1 35	1 35
Machine-tender	do	2 50	1 75	2 00	2 25	2 50	2 50	2 50	3 00
Machine-tender's helper	do	1 25	90	1 00	1 25	1 25	1 25	1 25	1 25
Finisher	Per 100 lbs.	3 $\frac{1}{2}$	3	3 $\frac{1}{2}$	3 $\frac{1}{2}$	4	4	4 $\frac{1}{2}$	4 $\frac{1}{2}$
Cutter, girl	Day	75	60 $\frac{1}{2}$	75	80	85	85	85	85
Fireman	do	2 00	1 50	2 00	2 25	2 50	2 50	2 50	2 50
Millwright	do	2 50	2 00	2 50	2 75	3 00	3 00	3 00	3 00
Carpenter	do	2 00	1 75	2 00	2 25	2 50	2 50	2 50	2 50

REMARKS.—Employes are paid weekly in cash.

Laborers and girls work 10 hours a day; all other classes 12 hours. It was formerly the custom for the hands to change at noon and midnight. Since 1876, however, the 24 hours have been divided into a night and a day shift, the former beginning at 6 p. m. and the latter at 7 a. m., and each set of hands works 11 hours per day one week and 13 hours the next. This method has proved the more satisfactory.

The mill has been in constant operation.

The following statement, appended to the schedule returned by this establishment, gives the prices and average labor cost of products for the years named:

Year.	SELLING PRICE.		Labor cost, per pound.
	Book paper, per pound.	Printing paper, per pound.	
1870	\$0 15 and \$0 18	\$0 13	\$0 01 $\frac{1}{2}$
1875	9 and 13	11 $\frac{1}{2}$	1 $\frac{1}{2}$
1880	9 and 12	11	0 $\frac{1}{2}$

There has been no increase in the efficiency of labor. The business is considered healthful.

Republic Printing Company, Enon Station, Ohio.

[STRAW AND RAG WRAPPING.]

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Foreman	Day	\$5 77	\$5 77	\$5 77	\$5 77	\$5 77	Back-tender	Day	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00
Bleacher	do	1 02	1 02	1 02	1 02	1 02	Finisher	do	1 75	1 75	1 75	1 75	1 75
Assistant bleacher	do	1 25	1 25	1 25	1 25	1 25	Finisher's helper	do	1 25	1 25	1 25	1 25	1 25
Rag engineer	do	1 75	1 75	1 75	1 75	1 75	Cutter, girl	do	60	60	60	60	60
Rag engineer's helper	do	1 25	1 25	1 25	1 25	1 25	Folder	do	1 40	1 40	1 40	1 40	1 40
Machine-tender	do	2 00	2 00	2 00	2 00	2 00	Fireman	do	1 75	1 75	1 75	1 75	1 75
Machine-tender's helper	do	1 25	1 25	1 25	1 25	1 25	Teamster	do	1 25	1 25	1 25	1 25	1 25

REMARKS.—Payments are monthly, and 90 per cent. in cash and 10 per cent. in store-orders.

The mill runs night and day with two sets of hands, and the hours of labor are 12 for all classes.

The works were in constant operation from 1873 to 1875, and since the latter date have been idle but 7 $\frac{1}{2}$ months altogether. The causes of irregularity were rebuilding after a fire, and a stoppage of two weeks to restrict production. There have been neither strikes nor lockouts.

There has been no change in the efficiency of labor.

The prices and labor cost of straw wrapping paper, which are the products of this mill, are as follows:

Year.	SELLING PRICE.		Labor cost of straw and rag paper, per cwt.
	Straw wrapping, per cwt.	Rag wrapping, per cwt.	
1873.....	\$2 50	\$3 50	\$0 05
1875.....	2 65	3 15	50
1880.....	2 45	2 05	43

Wages are from 35 to 40 per cent. of cost.

The trade is not considered by this firm as being dangerous or unhealthful.

Harding Paper Company, Franklin, Ohio.

[FINE LOFT-DRIED WRITING.]

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Foreman	Day	\$4 00	\$4 00	\$4 00	\$4 50- 4 00	\$4 50- 4 00	\$4 50- 4 00	\$4 50- 4 00	\$4 50- 4 00
Overseer in rag-room	do	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Bleacher	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Assistant bleacher	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Rag engineer	do	2 10½	2 10½	2 10½	2 10½	2 10½	2 10½	2 10½	2 10½
Rag engineer's helper	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Machine-tender	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Back-tender	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Loftman	do	1 50- 2 25	1 50- 2 25	1 50- 2 25	1 50- 2 25	1 50- 2 25	1 50- 2 25	1 50- 2 25	1 50- 2 25
Fireman	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Millwright	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Carpenter	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Teamster	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—No allowances or privileges are given to employes, and no deductions are required, except in the case of millwright and carpenter, who furnish their own tools.

All payments are weekly and in cash.

Machine-tenders, back-tenders, engineers, and firemen work 12 hours out of 24, half day and half night. All other classes work 10 hours a day.

The works have been in operation an average of 11½ months each year, except 1875 and 1876, when only halftime was made for a few

months, and one of the mills was idle for nearly 6 months by the washing away of a dam. There have been no strikes or lockouts.

The selling prices of writing paper are given as from 18½ to 25 cents per pound in 1880. The return states that it is impossible to arrive at a close estimate of the percentage of wages to cost, the varieties of production being so great, but that one-third may be given as an approximate ratio.

There has never been an accident at these works, and the trade is considered healthful.

Friend & Fox Paper Company, Loddard, Crescent, and Rialto, Ohio.

[BOOK, NEWS, AND WRAPPING.]

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Overseer in rag-room	Day	\$2 50	\$1 50	\$1 33	\$1 75	\$1 33	\$1 75	\$1 75	\$1 75
Bleacher	do	1 17	1 17	1 33	1 50	1 07	1 75	1 75	2 00
Rag engineer	do	2 00	1 75	2 00	2 17	2 00	2 00	2 00	2 00
Rag engineer's helper	do						1 75	1 75	
Machine-tender	do	2 50	2 25	2 25	2 50	2 50	2 50	2 50	3 00
Back-tender	do		1 00	1 25	1 40	1 50	1 50	1 50	1 75
Finisher	do	2 25	1 33	1 02	1 02	2 00	2 00	2 00	3 00
Cutter, girl	do		85	85	85	85	85	85	85
Fireman	do	1 33	1 17	1 33	1 50	1 07	1 75	1 75	1 33
Carpenter	do		2 25	2 50	2 50	2 00	2 50	2 50	2 33
Laborer	do	1 25	1 17	1 33	1 50	1 07	1 75	1 75	2 00

REMARKS.—A few opportunities for extra earnings for over-time are afforded to finishers only. These would increase regular wages, and have not been included in the table.

Weekly payment in cash is the rule.

Machine-tenders, rag engineers, and firemen work in two sets, 12 hours each. The men have urged that the mill be closed at 6 p. m. on Saturday and opened at 6 a. m. Monday, instead of running as now till 12 p. m. Saturday and starting at 1 a. m. Monday. The proprietors acknowledge that this would be a benefit to the mechanics, and state that they would be willing to pay full wages for the extra 12 hours of rest, but as other mills refuse to do so they can not adopt this rule without serious loss.

With the exercise of care the trade is not necessarily dangerous. No fatal accidents have occurred in the history of the mill, but slight ones are occasional.

The mill has run 12 months a year since 1843 until 1880, when the wrapping-paper department shut down two weeks in each of the months of April and May on account of an over-stock of wrapping paper in the market. Strikes and lockouts are unknown.

The selling prices for the various articles of product for 1880 were as follows:

Year.	Book, per pound.	News, per pound.	Wrapping, per pound.	Roofing, per pound.
1880.....	\$0 10 to \$0 12	\$0 00	\$0 02½	\$0 02½

There has been no change in the efficiency of labor.

It is stated that improvements are constantly being made, but that it is impossible to estimate their effect in lessening cost.

STATISTICS OF WAGES—PAPER MANUFACTURE.

Morrison, Bare & Cass, Roaring Spring, Pennsylvania.

[NEWS, COLORED, AND MANILA.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman.....	Day	\$7 00	\$6 00	\$6 00	\$5 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00	\$4 00
Overseer in rag-room	do	1 25	1 25	1 25	1 20	1 20	1 10	1 10	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Rag-sorter	do	00	00	00	00	00	50	50	00	00	00	00	00	00	00	00
Bleacher	do	1 25	1 25	1 25	1 20	1 20	1 10	1 10	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Rag engineer	do	1 50	1 37	1 37	1 37	1 30	1 25	1 25	1 40	1 40	1 40	1 40	1 40	1 40	1 40	1 40
Rag engineer's helper	do	1 10	1 10	1 10	1 10	1 10	1 00	1 00	1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 10
Machine-tender	do	2 00	2 00	2 00	2 00	2 00	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Machine-tender's helper	do												1 00	1 00	1 00	1 00
Back-tender	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Finisher	do	1 20	1 20	1 20	1 20	1 20	1 10	1 10	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Cutter, girl	do	00	00	00	00	00	50	50	00	00	00	00	50	50	50	50
Folder	do	70	70	70	00	00	00	00	70	70	70	70	00	00	00	00
Steam engineer	do	1 50	1 50	1 50	1 50	1 40	1 25	1 25	1 40	1 40	1 40	1 40	1 40	1 40	1 40	1 40
Steam engineer's helper	do	1 25	1 25	1 20	1 20	1 10	1 00	1 00	1 10	1 10	1 10	1 10	1 00	1 00	1 00	1 00
Fireman	do	1 10	1 10	1 10	1 10	1 10	1 00	1 00	1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 10
Machinist	do	2 50	2 50	2 50	2 25	2 00	2 00	2 00	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Millwright	do	2 50	2 50	2 25	2 25	2 25	2 00	2 00	2 50	2 50	2 50	2 50	2 00	2 00	2 00	2 00
Carpenter	do	1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Teamster	do	1 85	1 85	1 30	1 30	1 25	1 25	1 25	1 40	1 40	1 40	1 40	1 50	1 50	1 50	1 50
Laborer	do	1 10	1 10	1 10	1 00	1 00	1 00	1 00	1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 10

REMARKS.—There have been very few, if any, opportunities for over-time, and no allowances are given to employes, except that the foreman has house free of rent. This would increase his wages about 5 per cent., and has not been included in the table.

Although there is no specified rule as to the proportions of cash and store-orders used in payment, some employes drawing their whole wages in cash and others receiving the larger portion of their earnings in merchandise, the average is about 50 per cent. cash and 50 per cent. orders on the company's store. From 1866 to 1869 cash was paid on application; since 1869, monthly.

Hands on night and day turns work 12 hours out of 24; all others 10 hours.

From 1866 to 1870 the mill averaged 9½ months a year; from 1871 to 1875, 10½ months, and from 1876 to 1880, 10 months.

The irregularity has been caused by repairing after three explosions and a fire, and for incidental repairs. The proprietors state that they have never had a strike or a lockout.

The selling price, labor cost per pound, and percentage of wages to cost of news paper are as follows:

Year.	Selling price.	Labor cost.	Percentage of wages to cost.
1866.....	\$0 11		Per cent.
1871.....	10	\$0 01½	20
1875.....	8	1½	25
1880.....	6	0½	10

Labor has increased in efficiency as the result of experience and training. Every hand in the mill, except the foreman, at the date of this return, had learned his trade in it.

Some improved machinery has been introduced.

The trade is not unhealthful, and not dangerous, except from occasional explosions of wood-digesters.

Koons Brothers, Shickshinny, Pennsylvania.

[STRAW WRAPPING.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman	Day	\$3 00	\$2 50	\$3 33	\$3 33	\$3 70	\$3 70	\$3 70	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$3 21
Rag engineer	do	1 10	1 00	1 15	1 38	1 75	1 28	1 49	1 40	1 75	1 49	1 53	1 01	1 23	1 23	1 23
Machine-tender	do	1 37	1 12	1 27	1 54	1 54	1 62½	1 40	1 40	1 23	1 23	1 50	1 50	1 50		
Cutter, girl	do	79	75	81	81	77	77	60½	60½	60½	60½	60½	60½	60½	60½	60½
Fireman	do	1 10	1 00	1 15	1 35	1 23	1 23	1 23	1 23							
Teamster	do	1 25	1 12	1 27	1 85	1 85	1 42	1 33	1 33	1 23	1 23	1 23	1 15	1 15	1 23	1 23
Laborer	do	1 10	1 00	1 15	1 23	1 23	1 23	1 23	1 23	1 23	1 23	1 15	1 15	1 15	1 15	1 15

REMARKS.—Store-orders are given each month for a month's wages. The object of this arrangement is to defer the payment of cash 15 or 20 days.

The orders call for cash.

The hours of labor have always been 12 a day for all classes.

The mill is in operation on an average 9 months a year, the idleness being caused by low water. No strikes have taken place.

Some labor-saving machinery has been introduced, effecting a saving of about one-half in labor.

This proprietor remarks that it is always very damp about paper-mills, but that otherwise the trade is not considered unhealthful.

The selling price and labor cost of straw wrapping paper per pound are given as follows:

Year.	Selling price.	Labor cost.
1870.....	\$0 04 to \$0 04½	\$0 00½
1875.....	3½ to 4	0½
1880.....	3	

There has been no increase in the efficiency of labor.

STATISTICS OF WAGES—PAPER MANUFACTURE.

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An establishment in Pennsylvania.

[FINE BOOK, FLAT WRITING, AND ENVELOPE.]

Classes of employes.	Unit of payment.	DATES.											
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Foreman	Day.....	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$4 10 $\frac{1}{2}$	\$4 10 $\frac{1}{2}$	\$3 70 $\frac{1}{2}$	\$3 33 $\frac{1}{2}$
Overseer in rag-room	do	2 10 $\frac{1}{2}$	1 95	1 05	1 95	1 95	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Rag-sorter	do	83 $\frac{1}{2}$	83 $\frac{1}{2}$	80 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$
Bleacher	do	2 10 $\frac{1}{2}$	1 95	1 05	1 95	1 95	2 10 $\frac{1}{2}$	2 10 $\frac{1}{2}$	2 10 $\frac{1}{2}$	2 10 $\frac{1}{2}$	2 00	2 12 $\frac{1}{2}$	2 10 $\frac{1}{2}$
Assistant bleacher	do	1 83 $\frac{1}{2}$	1 05	1 05	1 05	1 05	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$
Rag engineer	do	2 33 $\frac{1}{2}$	2 10	2 10	2 10	2 10	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 50
Rag engineer's helper	do	1 83 $\frac{1}{2}$	1 05	1 05	1 05	1 05	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$
Machine-tender	do	3 00	2 70	2 70	2 70	2 70	3 00	3 00	3 00	3 00	2 60 $\frac{1}{2}$	2 00 $\frac{1}{2}$	2 00 $\frac{1}{2}$
Machine-tender's helper	do							2 60 $\frac{1}{2}$	2 50				
Back-tender	do	1 83 $\frac{1}{2}$	1 05	1 05	1 05	1 05	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 50	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$
Finisher	do	2 33 $\frac{1}{2}$	2 10	2 10	2 10	2 10	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$
Finisher's helper	do	1 50	1 00										
Cutter, girl	do	1 00	00	00	00	00	1 00	1 00	01 $\frac{1}{2}$	01 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$
Calenderer	do	2 33 $\frac{1}{2}$	2 10	2 10	2 10	2 10	2 33 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 10 $\frac{1}{2}$	2 10 $\frac{1}{2}$	2 10 $\frac{1}{2}$	2 10 $\frac{1}{2}$	2 10 $\frac{1}{2}$
Steam engineer	do	3 10 $\frac{1}{2}$	2 85	2 85	2 85	2 85	3 00	3 00	3 00	2 83 $\frac{1}{2}$	2 60 $\frac{1}{2}$	2 60 $\frac{1}{2}$	2 60 $\frac{1}{2}$
Steam engineer's helper	do	2 50	2 25	2 25	2 25	2 25	2 50	2 50	2 50				
Fireman	do	1 00 $\frac{1}{2}$	1 05	1 05	1 05	1 05	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$
Millwright	do	3 00	2 25	2 50	2 50	2 50	3 00	3 00	3 00	2 83 $\frac{1}{2}$	2 60 $\frac{1}{2}$	2 60 $\frac{1}{2}$	
Carpenter	do	2 10 $\frac{1}{2}$	2 00	2 00	1 83 $\frac{1}{2}$								
Laborer	do	1 83 $\frac{1}{2}$	1 05	1 05	1 05	1 05	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$

Classes of employes.	Unit of payment.	DATES.											
		1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.
Foreman	Day.....	\$3 83 $\frac{1}{2}$	\$3 33 $\frac{1}{2}$	\$3 83 $\frac{1}{2}$									
Overseer in rag-room	do	2 00	2 00	2 00	\$2 00	\$2 00	\$1 33 $\frac{1}{2}$	\$1 10 $\frac{1}{2}$	\$1 10 $\frac{1}{2}$	\$1 10 $\frac{1}{2}$	\$1 10 $\frac{1}{2}$	\$1 00	
Rag-sorter	do	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	00 $\frac{1}{2}$	00 $\frac{1}{2}$	00 $\frac{1}{2}$	50 $\frac{1}{2}$	50	
Bleacher	do	2 00	2 00	2 00	2 10 $\frac{1}{2}$	2 00	1 00 $\frac{1}{2}$	1 10 $\frac{1}{2}$	1 10 $\frac{1}{2}$	1 10 $\frac{1}{2}$	1 10 $\frac{1}{2}$	1 08 $\frac{1}{2}$	
Assistant bleacher	do	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 60 $\frac{1}{2}$	1 25	1 00	01 $\frac{1}{2}$	01 $\frac{1}{2}$	83 $\frac{1}{2}$	1 00	
Rag engineer	do	2 00	2 00	2 12 $\frac{1}{2}$	2 33 $\frac{1}{2}$	2 00	1 75	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 10 $\frac{1}{2}$	
Rag engineer's helper	do	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	2 00	2 00	1 33 $\frac{1}{2}$						
Machine-tender	do	2 50	2 50	2 50	2 75	2 50	2 10 $\frac{1}{2}$	1 50	1 50	1 50	1 50	1 50	
Machine-tender's helper	do												
Back-tender	do	1 00 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 50	1 10 $\frac{1}{2}$	83 $\frac{1}{2}$	01 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	75	
Finisher	do	2 00	2 00	2 00	2 10 $\frac{1}{2}$	2 00	1 00 $\frac{1}{2}$	1 33 $\frac{1}{2}$	1 33 $\frac{1}{2}$	1 33 $\frac{1}{2}$	1 33 $\frac{1}{2}$	1 33 $\frac{1}{2}$	
Finisher's helper	do												
Cutter, girl	do	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	00 $\frac{1}{2}$	58 $\frac{1}{2}$	50	50	50	50	50	
Calenderer	do	2 00	2 00	2 00	2 10 $\frac{1}{2}$	2 00	1 00 $\frac{1}{2}$	1 10 $\frac{1}{2}$	1 25	1 25			
Steam engineer	do	2 00 $\frac{1}{2}$	2 00 $\frac{1}{2}$	2 00 $\frac{1}{2}$	2 75	2 50	2 08 $\frac{1}{2}$	1 02 $\frac{1}{2}$	1 02 $\frac{1}{2}$	1 02 $\frac{1}{2}$	1 02 $\frac{1}{2}$	1 02 $\frac{1}{2}$	
Steam engineer's helper	do												
Fireman	do	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 83 $\frac{1}{2}$	1 00 $\frac{1}{2}$	1 10 $\frac{1}{2}$	1 00	1 00	1 00	1 00	1 00	
Millwright	do												
Carpenter	do												
Laborer	do	1 50	1 00 $\frac{1}{2}$	1 50	1 08 $\frac{1}{2}$	1 08 $\frac{1}{2}$	00 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	83 $\frac{1}{2}$	75	

REMARKS.—No allowances or privileges are given, except that houses are rented at nominal rates.

Payments, which have always been in cash, were monthly from 1858 to 1872, and since 1872 they have been fortnightly.

Rag-sorters work 10 hours a day; all other classes of employes work 12 hours.

The mill has been in operation 12 months a year since its establishment. During 3 months of 1874, however, only three-fourths time was made.

This company has never had a strike at its works.

The labor cost per pound in the manufacture of machine book paper since 1840 has been as follows:

1840....	\$0 17	1858....	\$0 13	1876....	\$0 20
1845....	17	1860....	11	1875....	13
1850....	15	1865....	25	1880....	8

The trade is healthful, except that there are occasional cases of small-pox among the employes of the rag-room; this disease most frequently attacks new hands who have not been recently vaccinated.

STATISTICS OF WAGES—PAPER MANUFACTURE.

An establishment in Virginia.

[STRAW BOARD.]

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Rag engineer.....	Day....	\$1 00	\$1 50	\$1 50	\$1 00	\$1 00	\$1 00	\$1 00	\$1 50	\$1 75	\$1 75
Rag engineer's helper.....	do....	1 25	1 20	1 10	1 40	1 25	1 10	1 00	1 50	1 25	1 25
Machine-tender.....	do....	2 25	2 25	2 25	2 25	2 50	2 50	3 00	3 00	3 00	2 75
Machine-tender's helper.....	do....	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Cutter, boy.....	do....	75	75	75	75	75	75	75	75	75	75
Steam engineer.....	do....	2 25	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50	2 50
Fireman.....	do....					1 50	1 50	1 50	1 50	1 50	1 50
Carpenter.....	do....							2 12½	2 12½	2 12½	2 12½
Teamster.....	do....	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Laborer.....	do....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—The following rates of wages are given in the schedule in addition to those tabulated:

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Tub-hand.....	Day....	\$1 15	\$1 00	\$1 00	\$1 00	\$1 10	\$1 10	\$1 25	\$1 25	\$1 25	\$1 25
Yard-hand.....	do....	1 15	1 00	1 00	1 00	1 10	1 10	1 25	1 25	1 25	1 25
Foreman tub-hands.....	do....	1 25	1 15	1 15	1 15	1 25	1 25	1 40	1 40	1 40	1 40
Stable-hand.....	do....	1 15	1 00	1 00	1 00	1 25	1 25	1 25	1 50	1 25	1 25
Blacksmith.....	do....							1 50	1 50		
Scalo-hand.....	do....	85	85	85							
Foreman teamster.....	do....	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	\$1 25

Cash has always been paid. From 1870 to 1875 payments were monthly; from 1875 to 1880 fortnightly; in 1880 the interval was changed to one week.

Carpenters and teamsters work 10 hours a day and tub-hands 8 hours, all other classes 12 hours, the mill running day and night, and the gangs changing at 6 a. m. and 6 p. m. Those who work at night one week are on the day turn the next week.

The mill has been in constant operation except in 1876, 1877, and the census year. In 1876 and 1877 but half-time was made, the cause of the irregularity being over-production, and in the census year two months were lost in adding new machinery.

There have been no strikes.

The following table shows the selling prices, labor cost, and percentage of wages to cost of straw boards:

Year.	Selling price per ton.	Labor cost per ton.	Percentage of wages to cost.
1870.....	\$55 00	\$13 00	Per cent. 33½
1875.....	40 00	11 50	33½
1880.....	\$37 50 to 57 00	10 50	33½

There has been no increase in the efficiency of labor.

Labor-saving machinery has been introduced. This has increased the output per man about 15 per cent., and has necessitated an increase of from 5 to 10 per cent. in the number of employes and in the total amount of wages paid.

The trade is not considered dangerous or unhealthful.

An establishment in Wisconsin.

[WRAPPING PAPER.]

Classes of employes.	Unit of payment.	DATES.																				
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.
Foreman.....	Day ..	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00
Rag-sorter.....	...do ..	75	75	75	62½	62½	62½	62½	62½	62½	62½	62½	62½	62½	62½	62½	62½	50	50	50	50	50
Bleacher.....	...do ..	1 25	1 25	1 25	1 25	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 25	1 50	1 75	1 75	1 75	1 50	1 50	1 00	1 00	1 00
Rag engineer.....	...do ..	1 50	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 75	1 75	1 75	1 75	1 75	1 75	1 25	1 25	1 25
Rag engineer's helper.....	...do ..	1 25	1 25	1 25	1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 25	1 50	1 75	1 75	1 75	1 50	1 50	1 00	1 00	1 00
Machine-tender.....	...do ..	2 00	2 00	2 00	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	2 00	2 00	2 00	2 00	2 00	1 75	1 75	1 75	1 75	1 75
Finisher.....	...do ..	1 50	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 75	2 00	2 00	2 00	1 50	1 50	1 50	1 50
Cutter, girl.....	...do ..	75	75	75	62½	62½	62½	62½	62½	62½	62½	62½	62½	62½	62½	62½	62½	50	50	50	50	50
Folder.....	...do ..	75	75	75	62½	62½	62½	62½	62½	62½	62½	62½	62½	75	1 00	1 00	1 00	1 00	75	75	75	75
Fireman.....	...do ..	1 25	1 25	1 25	1 12½	1 12½	1 12½	1 12½	1 12½	1 12½	1 12½	1 12½	1 25	1 50	1 75	1 75	1 50	1 50	1 00	1 00	1 00	1 00
Carpenter.....	...do ..	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	2 00	2 00	1 75	1 50	1 50	1 50	1 25	1 25	1 25
Teamster.....	...do ..	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 75	1 75	1 50	1 50	1 50	1 00	1 00	1 00
Laborer.....	...do ..	1 25	1 10	1 10	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 25	1 50	1 75	1 75	1 50	1 50	1 50	1 00	1 00	1 00

REMARKS.—Employes are paid partly in cash, and a small proportion in store-orders, when needed, through the month. Payments are monthly, or oftener if application is made.

Machine-hands are employed 12 hours a day; all others 10. It was formerly the custom for the hands running the machinery to change at 12 p. m., but this practice has recently been abandoned, one set now working all night and the other all day.

The works have run nearly 12 months a year, the only stoppage being for repairs and improvements.

New water-wheels have been put in and machinery of greater capacity, the effect of which has been a reduction in the cost of labor.

The trade is said to be neither dangerous nor unhealthful.

PIANOS AND ORGANS.

These tabulations give the rates of wages paid in the manufacture of pianos and pipe and reed organs. Though there are but few returns, they are very complete and interesting. One tabulation gives the rates of wages paid in the manufacture of pianos from 1843; another the rates in connection with pipe organs from 1851; and one relating to the manufacture of reed organs gives rates from 1836. These tabulations also include statements from some of the oldest and most prominent manufacturers in their several lines in the country, as Steinway & Sons, in pianos; Johnson & Son, in pipe organs; and the Prescott Organ Company, in reed organs.

Extra earnings or deductions.—As a rule, no opportunities for extra earnings are reported. There is one exception to this, however—the case of Steinway & Sons, who report that during the months of November and December, in the finishing departments, there are opportunities for over-time, which would increase the wages from \$3 to \$5 per week.

No allowances are noted except in the case of the Prescott Organ Company, which gave free board to all its employes from 1836 to 1840.

With one exception, that of Johnson & Son, the skilled laborers directly connected with the manufacture of the instruments made, furnish their own tools, but it is stated that the expense would decrease regular wages but slightly.

Payments.—All payments are in cash. There is no regular interval, some establishments paying weekly, others monthly, and others every two weeks. One case is noted, however, in which there has been a change from weekly payments to monthly payments.

Hours of labor.—Ten seems to be the usual number of hours of labor at these establishments, though there are some exceptions to this. One concern notes that from 1836 to 1850 the hours of labor were 14 a day. At the latter date they were changed to 10, in accordance with a law that was passed at the time.

Regularity of employment.—So far as there are statements under this head in the schedules, with one exception, the establishments have run 12 months a year. The exception is that of Steinway & Sons. The irregularity at these works has been caused by strikes, the remarks regarding which are given in connection with the schedule.

Relation of wages and labor to selling price and cost.—There is such a great variety in the instruments made at the several works that it seems almost impossible to give any statements under this head. One schedule, however, remarks that the labor cost of each piano is from \$100 to \$200, and that wages are about 25 per cent. more than the other items of cost. One schedule gives the ratio of wages to cost in the manufacture of pianos as 75 per cent., and another as 66⅔ per cent.

The schedule stating that the cost of pianos in 1880 was from \$100 to \$200, gives the selling price as from \$400 to \$800. This would show an apparently great profit, but the cost of selling is not included in the total cost. This, it is well known, is very great, and would serve to reduce materially the apparent profit.

Efficiency of labor and labor-saving machinery.—With one exception no change is noted in the efficiency of labor. The return noting an increase in efficiency ascribes it to the reduction in the wages per piece of piece-workers.

A great deal of the work about piano and organ factories is wood and metal working, and at these works the improved machinery that has become so common in recent years in these two classes of work has been introduced to a large extent.

Healthfulness and accidents.—The industry seems to be very healthful, and subject only to those accidents that are common to the use of machinery.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Johnson & Son, Westfield, Massachusetts.

[ORGANS.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.													
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1867.	1866.
Voicer.....	Day....	\$3 50- 4 00	\$3 50- 4 00	\$5 00- 6 00	\$5 00- 6 00	\$5 00- 6 00	\$5 00- 6 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$5 00	\$4 00	\$4 00
Tuner.....	do....	3 50- 4 00	3 50- 4 00	5 00- 6 00	5 00- 6 00	5 00- 6 00	5 00- 6 00	5 00	5 00	5 00	5 00	5 00	5 00	4 00	4 00
Action-maker.....	do....	2 50	2 25	3 25	3 50	3 75	4 00	4 00	4 00	3 75	3 50	3 25	3 00	2 75	2 50
All others.....	do....	2 00	1 75	2 25- 2 50	2 75	3 00	3 25	3 25	3 25	3 25	3 00	2 75	2 75	2 50	2 25

STATISTICS OF WAGES—PIANOS AND ORGANS.

Johnson & Son, Westfield, Massachusetts—Continued.

Classes of employes.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Voicer	Day	\$4 00	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 50	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00
Tuner	do	4 00	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Action-maker	do	2 50	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
All others	do	2 25	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75

REMARKS.—This establishment manufactures pipe organs, and is the only one from which a return has been received that does not require any of its employes to provide their own tools.

Cash payments have been made monthly since 1845, except in 1875, when they were made weekly.

Ten hours has always been a day's work from 1844 to 1880 in this manufactory, and the works have never been idle since their establishment.

It is stated in this return that there has been no change in the efficiency of labor.

An establishment in Massachusetts.

[PIANOS.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Varnisher	Day	\$2 12	\$1 00	\$2 23	\$2 23	\$2 11	\$2 45	.....	.....	\$2 62	.....	.....	\$2 85	.....	.....	.....
Case-maker	do	2 12	1 82	1 69	1 58	1 44	1 97	.....	.....	2 50	.....	.....	2 67	.....	.....	.....
Sounding-board maker	do	2 09	2 22	2 11	2 03	1 92	2 09	.....	.....	2 44	.....	.....	2 64	.....	.....	.....
Finisher	do	2 36	2 12	1 95	1 86	2 03	2 03	.....	.....	2 40	.....	.....	2 87	.....	.....	.....
Action-regulator	do	3 36	2 12	2 00	1 91	1 88	1 84	.....	.....	2 51	.....	.....	2 68	.....	.....	.....
Tone-regulator	do	2 89	2 51	2 64	1 61	1 64	2 58	.....	.....	2 35	.....	.....	2 70	.....	.....	.....
Tuner	do	2 43	2 94	2 93	2 98	3 64	2 90	.....	.....	2 06	.....	.....	2 82	.....	.....	.....
Carver	do	2 25	2 03	1 70	1 65	2 39	2 01	.....	.....	2 17	.....	.....	2 12	.....	.....	.....
Key-maker	do	2 33	2 09	1 96	1 67	1 83	1 63	.....	.....	2 23	.....	.....	2 41	.....	.....	.....
Action-maker	do	76	90	1 25	1 22	61	1 48	.....	.....	2 20	.....	.....	2 48	.....	.....	.....
Top-maker	do	2 26	2 03	1 93	1 88	1 81	2 32	.....	.....	2 53	.....	.....	2 71	.....	.....	.....
Foreman	do	6 61	6 61	6 61	6 41	6 60	5 90	.....	.....	5 93	.....	.....	5 87	.....	.....	.....
Laborer	do	1 45	1 49	1 50	1 53	1 91	1 78	.....	.....	1 43	.....	.....	1 65	.....	.....	.....
Clerk	do	5 40	4 90	4 85	4 32	4 00	3 84	.....	.....	5 11	.....	.....	4 70	.....	.....	.....
Salesman	do	6 20	6 00	8 18	8 77	8 77	8 77	.....	.....	7 44	.....	.....	4 80	.....	.....	.....

Classes of employes.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Varnisher	Day	\$2 57	.....	.....	\$2 46	.....	.....	\$2 10	.....	.....	\$1 80	.....	\$1 04	.....	.....	.....
Case-maker	do	2 25	.....	.....	1 74	.....	.....	1 72	.....	.....	1 80	.....	1 90	.....	.....	\$1 00
Sounding-board maker	do	2 17	.....	.....	1 83	.....	.....	1 75	.....	.....	1 68	.....	1 96	.....	.....	1 86
Finisher	do	2 59	.....	.....	2 10	.....	.....	2 22	.....	.....	2 45	.....	2 50	.....	.....	1 70
Action-regulator	do	2 31	.....	.....	1 94	.....	.....	1 84	.....	.....	.....	.....	.....	.....	.....	.....
Tone-regulator	do	2 36	.....	.....	1 72	.....	.....	.....	.....	.....	2 92	.....	.....	.....	.....	1 60
Tuner	do	2 43	.....	.....	2 70	.....	.....	2 11	.....	.....	2 75	.....	2 40	.....	.....	.....
Carver	do	2 13	.....	.....	1 62	.....	.....	2 00	.....	.....	2 10	.....	2 33	.....	.....	.....
Key-maker	do	2 43	.....	.....	2 18	.....	.....	2 28	.....	.....	2 18	.....	2 01	.....	.....	1 83
Action-maker	do	2 14	.....	.....	1 53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Top-maker	do	2 54	.....	.....	2 04	.....	.....	2 31	.....	.....	1 74	.....	2 13	.....	.....	.....
Foreman	do	6 01	.....	.....	4 23	.....	.....	3 52	.....	.....	3 12	.....	2 83	.....	.....	2 40
Laborer	do	1 54	.....	.....	1 20	.....	.....	1 22	.....	.....	1 20	.....	1 10	.....	.....	85
Clerk	do	4 23	.....	.....	4 64	.....	.....	3 83	.....	.....	4 00	.....	3 65	.....	.....	3 87
Salesman	do	4 10	.....	.....	3 84	.....	.....	4 70	.....	.....	4 80	.....	4 10	.....	.....	3 84

REMARKS.—These works were established in 1823, and manufacture pianos.

The rates were given "per year", and the daily wages were ascertained by dividing by 312.

Each workman furnishes his ordinary tools or "kit", the firm providing all machinery, large tools, and power. This expense would decrease regular wages, and has not been considered in making up the tables.

Payments are and always have been made in cash each week.

All classes have been employed 10 hours a day except during the short days of winter, in the last two years covered by the report, when the regular hours of labor were 9. This change has been found advisable, as it is difficult to perform certain portions of the work by artificial light; and since the majority of the employes work

by the piece and it is to their interest to accomplish as much as they can, little change has been noticed in amount of product.

The works have run 12 months a year since 1830, and have been free from labor difficulties.

It is stated that in 1830 pianos ranged in price from \$250 to \$500; in 1845, from \$300 to \$600; in 1860, from \$350 to \$700; in 1870 and 1880, from \$400 to \$800. The labor cost varies from \$100 to \$200 per instrument, and is about 75 per cent. of the total cost.

Labor has not increased in efficiency.

Numerous labor-saving machines have been introduced in consequence of the great changes in methods and materials of construction. The effect of these upon the aggregate wages has not been great.

The trade is not more dangerous than any other in which machinery is used. Accidents at these works have been rare.

STATISTICS OF WAGES—PIANOS AND ORGANS.

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An establishment in Michigan.

[ORGANS.]

Classes of employées.	Unit of payment.	DATES.								
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Tuner	Month..	\$75 00	\$75 00	\$70 00	\$75 00	\$80 00	\$105 00	\$110 00	\$145 00	\$130 00
Action-maker	do	58 00	57 00	55 00	60 00	68 00	75 00	78 00	82 00	70 00
Constructor	do	50 00	58 00	52 00	58 00	65 00	68 00	70 00	78 00	68 00
Cabinet-maker	do	58 00	55 00	45 00	53 00	60 00	65 00	68 00	75 00	70 00
Carver	do	55 00	45 00	42 00	50 00	50 00	60 00	67 00	73 00	70 00
Finisher	do	41 00	40 00	39 00	48 00	53 00	57 00	60 00	65 00	62 00
Machine-hand	Day	1 90	1 60	1 50	1 70	2 10	2 20	2 20	2 50	2 25
Engineer	do	2 00	1 80	1 75	2 00	2 25	2 25	2 25	2 50	2 50
Yardman	do	1 15	1 10	1 00	1 10	1 05	1 75	1 75	1 90	1 75

REMARKS.—Reed organs are made at these works.

The above rates include all extra earnings made by working overtime.

All employées, except machine-hands, engineers, and yardmen furnish their own tools.

The firm pays weekly and in cash.

Tuners are occupied 8 hours a day, and other classes from 9 to 10.

Regarding selling price, etc., though the proprietors decline to

give exact figures, they say that wholesale prices of product have decreased in much greater proportion than the wages of any class of employées, so much so that business has been conducted at a loss for some years.

There has been a marked improvement in skill.

Reduced prices have been an incentive to greater exertion, also to the cultivation of system, and in quantity in devising shorter methods of obtaining given results.

The Prescott Organ Company, Concord, New Hampshire.

[ORGANS.]

Classes of employées.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Case-maker	Day	\$2 00	\$1 75	\$1 75	\$1 75	\$2 00	\$2 25	\$2 50	\$2 75	\$2 50	\$2 50	\$2 50	\$2 25	\$2 25	\$2 25	\$2 00
Action-maker	do	2 00	1 80	2 00	2 25	2 50	2 75	3 00	3 25	3 00	3 00	2 75	2 75	2 65	2 00	2 50
Varnisher	do	2 00	1 75	1 75	1 75	2 00	2 25	2 50	2 75	2 50	2 50	2 50	2 25	2 25	2 25	2 00
Tuner	do	3 25	3 25	3 25	3 50	3 50	3 75	3 75	4 00	3 75	3 50	3 25	3 25	3 00	3 00	2 75
Finisher	do	2 00	1 80	2 00	2 25	2 50	2 75	3 00	3 00	3 00	2 75	2 50	2 50	2 50	2 25	2 00
Mill-hand	do	2 00	1 75	1 75	1 75	2 00	2 25	2 50	2 75	2 50	2 50	2 50	2 25	2 25	2 25	2 00
Yardman	do	1 00	00	1 00	1 00	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50

Classes of employées.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Case-maker	Day	\$2 00	\$2 00	\$1 75	\$1 75	\$1 75	\$1 75	\$1 75	\$1 75	\$1 70	\$1 60	\$1 50	\$1 50	\$1 40	\$1 40	\$1 35
Action-maker	do	2 50	2 50	2 00	2 00	2 00	1 75	1 75	1 75	1 70	1 60	1 50	1 50	1 40	1 40	1 35
Varnisher	do	2 00	2 00	1 75	1 75	1 75	1 75	1 75	1 75	1 70	1 60	1 50	1 50	1 40	1 40	1 35
Tuner	do	2 75	2 75	2 25	2 25	2 25	2 00	2 00	2 00	1 90	1 85	1 75	1 75	1 65	1 65	1 50
Finisher	do	2 00	2 00	1 75	1 75	1 75	1 75	1 75	1 75	1 70	1 60	1 50	1 50	1 40	1 40	1 35
Mill-hand	do	2 00	2 00	1 75	1 75	1 75	1 65	1 65	1 65	1 60	1 50	1 40	1 40	1 30	1 30	1 25
Yardman	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

Classes of employées.	Unit of payment.	DATES.														
		1850.	1849.	1848.	1847.	1846.	1845.	1844.	1843.	1842.	1841.	1840.	1839.	1838.	1837.	1836.
Case-maker	Day	\$1 33	\$1 35	\$1 30	\$1 30	\$1 25	\$1 25	\$1 25	\$1 25	\$1 25	\$1 00	\$3 00	\$2 50	\$2 50	\$2 40	\$2 50
Action-maker	do	1 33	1 35	1 30	1 30	1 25	1 25	1 25	1 25	1 25	1 00	3 00	2 50	2 50	2 40	2 50
Varnisher	do	1 35	1 35	1 30	1 30	1 25	1 25	1 25	1 25	1 25	1 00	3 00	2 50	2 50	2 40	2 50
Tuner	do	1 35	1 35	1 30	1 30	1 25	1 25	1 25	1 25	1 25	1 00	3 00	2 50	2 50	2 40	2 50
Finisher	do	1 35	1 35	1 30	1 30	1 25	1 25	1 25	1 25	1 25	1 00	3 00	2 50	2 50	2 40	2 50
Mill-hand	do	1 25	1 25	1 20	1 20	1 15	1 15	1 15	1 15	1 15	00	2 75	2 25	2 25	2 20	2 25
Yardman	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—This firm manufactures reed parlor organs and cabinet organs. The wages from 1836 to 1840 are in addition to board.

Employées furnish their own outfit. This expense has not been considered in making up the above tables.

Cash was paid on application from 1836 to 1870, when the system of monthly payments was adopted.

For several years after the establishment of the factory all hands worked 14 hours a day, but some time about 1850 the hours were reduced in conformity to the 10-hour law.

The factory has always been in operation 12 months in the year.

This schedule also remarks a reduction in the wholesale price of product, stating it to be from 30 to 40 per cent. within the last four years covered by the report.

Wages at this establishment are about 40 per cent. of the total cost of product.

The proprietors also state that they have never had a strike or a lockout, and that their business seems to be very attractive and healthful, being light and clean.

STATISTICS OF WAGES—PIANOS AND ORGANS.

Steinway & Sons, New York, New York.

[PIANOS.]

Classes of employes.	Unit of payment.	DATES.													
		1860.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Varnisher.....	Day....	\$2 50	\$2 33½	\$2 16½	\$2 16½	\$2 16½	\$2 33½	\$2 33½	\$2 50	\$2 66½	\$2 50	\$2 50	\$2 50	\$2 50	\$2 33½
Case-maker.....	do....	2 66½	2 33½	2 16½	2 16½	2 16½	2 33½	2 33½	2 50	2 66½	2 50	2 50	2 50	2 50	2 33½
Soundboard-maker.....	do....	3 33½	3 16½	3 00	3 00	3 00	3 16½	3 16½	3 33½	3 00½	3 33½	3 00½	3 33½	3 00	2 83½
Finisher.....	do....	3 16½	2 83½	2 66½	2 66½	2 66½	2 83½	2 83½	3 00	3 16½	3 00	3 16½	3 00	2 83½	2 50
Action-regulator.....	do....	3 16½	2 83½	2 66½	2 66½	2 66½	2 83½	2 83½	3 00	3 16½	3 00	3 16½	3 00	2 83½	2 50
Tone-regulator.....	do....	3 33½	3 16½	3 16½	3 16½	3 16½	3 33½	3 33½	3 50	3 66½	3 33½	3 33½	3 16½	3 16½	3 00
Tuner.....	do....	2 66½	2 33½	2 16½	2 16½	2 16½	2 33½	2 33½	3 50	3 33½	3 16½	3 16½	3 00	3 00	2 83½
Carver.....	do....	2 66½	2 33½	2 16½	2 16½	2 16½	2 33½	2 33½	2 50	2 66½	2 50	2 50	2 50	2 50	2 50
Key-maker.....	do....	2 66½	2 33½	2 16½	2 16½	2 16½	2 33½	2 33½	2 50	2 66½	2 50	2 50	2 50	2 50	2 33½
Action-maker.....	do....	3 33½	3 00	2 66½	2 66½	2 66½	2 83½	2 83½	3 00	3 16½	3 16½	3 16½	3 00	2 83½	2 66½
Fly-finisher.....	do....	3 16½	2 83½	2 66½	2 66½	2 66½	2 83½	2 83½	3 00	3 16½	3 00	3 16½	3 00	2 83½	2 66½
Foreman.....	do....	4 16½	4 16½	4 16½	4 16½	4 16½	4 16½	4 16½	4 16½	4 16½	4 16½	4 16½	4 16½	4 16½	4 16½
Top-maker.....	do....	3 33½	3 00	2 83½	2 83½	2 83½	3 00	3 00	3 16½	3 33½	3 16½	3 33½	3 16½	3 00	3 00
Laborer.....	do....	1 83½	1 83½	1 66½	1 66½	1 66½	1 66½	1 66½	1 83½	2 00	1 83½	1 83½	1 83½	1 83½	1 83½
Clerk.....	do....	6 00½	6 06½	6 06½	6 06½	6 06½	6 06½	6 06½	5 83½	5 83½	5 00	5 00	5 00	5 00	5 00
Salesman.....	do....	0 10½	0 16½	0 16½	0 16½	8 33½	8 33½	8 33½	8 33½	8 33½	7 50	7 50	7 50	7 50	7 50

Classes of employes.	Unit of payment.	DATES.													
		1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.
Varnisher.....	Day....	\$2 33½	\$2 33½	\$2 33½	\$2 00	\$1 83½	\$1 00½	\$1 83½	\$1 83½	\$1 00½	\$1 66½	\$1 00½	\$1 00½	\$1 00½	\$1 00½
Case-maker.....	do....	2 33½	2 33½	2 33½	2 16½	1 83½	1 00½	1 83½	1 83½	1 66½	1 66½	1 00½	1 66½	1 00½	1 00½
Soundboard-maker.....	do....	2 66½	2 66½	2 66½	2 50	2 16½	2 00	2 16½	2 16½	2 00	2 00	2 00	2 00	2 00	2 00
Finisher.....	do....	2 50	2 50	2 50	2 33½	2 16½	2 00	2 16½	2 16½	2 00	2 00	2 00	2 00	2 00	2 00
Action-regulator.....	do....	2 50	2 50	2 50	2 33½	2 16½	2 00	2 16½	2 16½	2 00	2 00	2 00	2 00	2 00	2 00
Tone-regulator.....	do....	2 83½	2 83½	2 83½	2 66½	2 50	2 33½	2 50	2 50	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½
Tuner.....	do....	2 66½	2 66½	2 66½	2 50	2 33½	2 16½	2 33½	2 33½	2 16½	2 16½	2 16½	2 16½	2 16½	2 16½
Carver.....	do....	2 33½	2 33½	2 33½	2 16½	1 83½	1 66½	1 83½	1 83½	1 66½	1 66½	1 66½	1 66½	1 66½	1 66½
Key-maker.....	do....	2 33½	2 33½	2 33½	2 16½	2 00	1 83½	2 00	2 00	1 83½	1 83½	1 83½	1 83½	1 83½	1 83½
Action-maker.....	do....	2 66½	2 50	2 50	2 33½	2 16½	2 00	2 16½	2 16½	2 00	2 00	2 00	2 00	2 00	2 00
Fly-finisher.....	do....	2 50	2 50	2 50	2 33½	2 16½	2 00	2 16½	2 16½	2 00	2 00	2 00	2 00	2 00	2 00
Foreman.....	do....	4 16½	4 16½	5 00	4 16½	4 00	3 66½	3 66½	3 33½	3 33½	3 00	3 00	2 50	2 50	2 50
Top-maker.....	do....	2 83½	2 83½	2 83½	2 66½	2 50	2 33½	2 50	2 50	2 33½	2 33½	2 33½	2 33½	2 33½	2 33½
Laborer.....	do....	1 83½	1 83½	1 66½	1 66½	1 50	1 33½	1 50	1 50	1 33½	1 33½	1 33½	1 33½	1 33½	1 33½
Clerk.....	do....	5 00	4 16½	4 16½	4 16½	3 66½	3 33½	3 33½	3 33½	.....	.....	.....	.....	.....	.....
Salesman.....	do....	7 50	6 00½	6 06½	6 06½	5 00	3 66½	3 33½	.....	.....	.....	.....	.....	.....	.....

REMARKS.—Grand, square, and upright pianos are manufactured by this firm.

In the finishing departments, in the months of November and December, employes earn from \$3 to \$5 a week above the earnings given in the table.

About two-thirds of the workmen supply their own tools, ranging in value from \$30 to \$150. These, however, last a long time, and the expense is slight.

Cash has always been paid every two weeks.

All classes work 10 hours a day.

The works have been in constant operation 12 months a year since 1853 except when strikes have taken place.

In October, 1863, a demand was made for 25 per cent. advance in wages, which was compromised at 15 per cent. after a week's strike. In February and March, 1864, 25 per cent. advance was again demanded, resulting in 8 weeks' lockout by combined manufacturers, and a complete defeat of the workmen, who resumed at old rates, having lost \$60,000 in wages. In June and July, 1872, piano-makers with other trades struck for a reduction from 10 to 8 hours for a

day's work and 20 per cent. more wages. The workmen were defeated and resumed at old terms, having lost \$100,000.

In February and March, 1880, the men struck for 10 per cent. advance and partial control of the foreman and apprentices. The strike lasted 6 weeks, when the advance was conceded but not the control. The loss in wages was \$60,000.

These manufacturers give as their reason for not stating selling prices that pianos are sold from a printed price list, which is confidential to the trade.

The total cost of labor forms about 66½ per cent. of the cost of Steinway pianos.

There has been no perceptible change in the efficiency of labor.

Numerous labor-saving machines have been introduced during the past 25 years, among them planing, boring, moistening, fraizing, and scraping machines.

The effect of these improvements has been a great saving in time and labor.

The trade is healthful, the men working in large airy rooms with all conveniences.

PINS.

My assistants, while collecting statistics for other industries, were fortunate enough to secure the two interesting statements which follow regarding the wages paid in the manufacture of pins.

The returns are so few in number that no general deductions can be made from the explanatory and supplemental statements, nor is such a general statement necessary.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

American Pin Company, Waterbury, Connecticut.

Classes of employes.	Unit of payment.	DATES.												
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Mechanic.....	Day	\$2 50	\$2 50	\$2 50	\$3 00	\$3 00	\$3 00	\$3 00	\$3 00	\$1 00	\$3 00	\$3 00	\$3 00	\$2 50
Laborer.....	do	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 50
Girl.....	do	83½	89½	89½	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	91½

Classes of employes.	Unit of payment.	DATES.												
		1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.
Mechanic.....	Day	\$2 50	\$2 25	\$2 25	\$2 00	\$2 00	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50
Laborer.....	do	1 50	1 50	1 50	1 25	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Girl.....	do	91½	91½	91½	83½	83½	58½	58½	58½	58½	58½	58½	58½	58½

REMARKS.—These works were established in 1846, and manufacture pins and hooks and eyes.

Employes are paid weekly in cash.

All classes work 10 hours a day. Prior to 1870 the factory ran 12 months a year; since that date, however, it has been idle about one month every summer for vacation.

Wages are estimated to be about one-third of total cost of production.

There has been no change in the efficiency of labor, and no labor-saving machinery has been introduced.

The trade is considered healthful and safe.

A very complete statement of selling prices and labor cost of the articles produced is given as follows:

Year.	SELLING PRICE.		LABOR COST.	
	Pins, per package.	Hooks and eyes, per great gross.	Pins, per package.	Hooks and eyes, per great gross.
1855.....	\$0 40	\$0 70	\$0 12	\$0 50
1860.....	40	70	12	50
1865.....	00	80	10	58
1870.....	40	70	18	65
1875.....	30	60	16	58
1880.....	40	80	16	58

New England Pin Company, Winsted, Connecticut.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Pin-maker.....	Day	\$3 00	\$2 75	\$3 50	\$2 50	\$2 75	\$2 75	\$3 00	\$3 25	\$3 25	\$3 25
Machinist.....	do	2 75	2 75	2 50	2 50	2 75	3 00	3 25	3 25	3 25	3 25
Wire-straightener.....	do	1 25	1 25	1 10	1 10	1 10	1 10	1 25	1 25	1 25	1 25
Common laborer.....	do	1 50	1 50	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 50
Boy.....	do	75	75	60	60	60	60	70	75	75	75
Sticker, girl.....	do	1 00	1 00	85	85	85	85	1 00	1 00	1 00	1 00
Other girls.....	do	75	75	65	65	65	65	75	75	75	75

REMARKS.—Pyramid and safety pins are manufactured at these works, which have been in constant operation since 1864.

The payments are in cash, and were quarterly prior to 1875, since which time they have been monthly.

The statement is made in connection with the above tabulation that from 1855 to 1869 all classes of employes worked 11 hours a day; from 1870 to 1880, 10 hours a day.

PORK-PACKING.

But four statements of wages were received in connection with this industry, not one of which was from Chicago, the great pork-packing center.

The classes of labor employed are by no means numerous, nor are the supplemental statements of much value.

Employés at the four works reporting are paid in cash weekly, and work 10 hours a day.

The works have been in operation in most instances the whole year, with a less number of hands in that portion of the year that is not regarded as particularly the pork-packing season.

Some very interesting statements are made regarding the selling prices of various products, but no statement is made as to the relation of wages to cost.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Coffin, Greenstreet & Fletcher, Indianapolis, Indiana.

Classes of employéa.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Scrapper.....	Day....	\$2 00	\$1 75	\$1 75	\$1 75	\$1 50	\$1 75	\$1 75	\$2 00	\$3 00	\$2 50	\$2 50	\$2 25	\$2 00	\$2 00	\$2 00
Shaver.....	...do....	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 50	2 50	2 00	2 00	1 75	1 50	1 50	1 50
Cellarman.....	...do....	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 25	2 00	1 75	1 75	1 50	1 25	1 25	1 25
Laborer.....	...do....	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 25	2 00	1 75	1 75	1 50	1 25	1 25	1 25

REMARKS.—This packing-house was established in 1862, since which time it has run about 11½ months a year, the cause of irregularity being want of hogs to slaughter.

The following selling prices are given in the statement appended to the return made by this establishment:

Year.	Meas pork, per barrel.	C. R. sides, per pound.	P. S. lard, per pound.	S. P. hams, per pound.
1865.....	\$30 00	.....	\$0 20	.....
1870.....	26 50	.....	15	.....
1875.....	20 05	.....	13	.....
1880.....	14 00	\$0 07½	8	\$0 08½

McFerran, Shallcross & Co., Louisville, Kentucky.

Class of employéa.	Unit of payment.	DATES.			
		1880.	1879.	1878.	1877.
Laborer.....	Day.....	\$1 10- 1 40	\$1 10- 1 40	\$1 00- 1 25	\$1 00- 1 25

REMARKS.—The only supplementary statement in this return not included in the general comments is that the establishment is operated 12 months a year.

STATISTICS OF WAGES—PORK-PACKING.

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An establishment in Ohio.

Class of employes.	Unit of payment.	DATES.								
		1881.	1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Laborer	Day ...	\$1 50	\$1 25- 1 50	\$1 25	\$1 25	\$1 50- 1 25	\$1 75	\$1 75	\$2 00	\$2 00

REMARKS.—This house was established in 1873.
No employes except foremen are paid for holidays unless they work, when they receive regular wages.
The work is free from danger, and is regarded by the proprietors as being perfectly healthful.

The works have been in constant operation. There was a strike in the spring of 1875, but it was of short duration, and the men resumed at old rates.

The following prices were not given by the firm, but were taken, at their suggestion, from Maxwell's *Chamber of Commerce Report*:

Year.	Mess pork, per barrel.	Shoulder, per 100 pounds.	Hams, per 100 pounds.	Lard, per 100 pounds.
1873.....	\$14 85	\$5 00 to \$6 80	\$14 58	\$8 25
1874.....	16 68	6 50 to 7 40	13 30	9 80
1875.....	20 40	7 84 to 9 07	13 30	14 45
1876.....	20 92	7 98 to 9 21	14 40	13 27
1877.....	15 42	5 80 to 6 80	12 34	10 53
1878.....	10 99	4 77 to 5 68	10 31	8 07
1879.....	9 24	3 50 to 4 09	9 35	6 87
1880.....	11 87	4 21 to 5 62	9 91	7 61

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.					Classes of employes.	Unit of payment.	DATES.				
		1880.	1879.	1878.	1877.	1876.			1880.	1879.	1878.	1877.	1876.
Cutter	Day ...	\$1 87½	\$1 75	\$1 75	\$1 75	\$1 75	Laborer	Day ...	\$1 37½	\$1 25	\$1 25	\$1 25	\$1 50

REMARKS.—Employes can increase the above rates about 5 per cent. by working over-time, and employment is constant throughout the year.

In 1880 mess pork sold for \$14 a barrel and clear pork for \$16; smoked hams for 10 cents a pound and smoked bacon for 9½.

The remark is made in connection with the above return that in June, 1880, a hog-scraping machine for scraping the hair from hogs when slaughtered was introduced. This has effected a considerable saving in labor, as well as an increase in the capacity of the slaughtering department.

POTTERY AND EARTHEN-WARE.

Great difficulty was experienced in securing returns from individual establishments in this industry. Most of those received, however, are very complete, and may be taken as fairly representing the industry in the localities from which they come. Of the 34 schedules sent out but 7 were returned and 6 tabulated. Very full returns of wages have been received from East Liverpool, one of the two great centers of this industry in the United States. No schedule worthy of tabulation, however, was sent from any of the Trenton potteries. Some rates of wages were secured in other ways; some of the schedules returned contained information which is given below, and I was fortunate in securing a comparison of the rates of wages at 15 Trenton potteries and 15 Staffordshire potteries, which also will be found below.

This classification includes works manufacturing Rockingham, yellow, and C. C. ware, ironstone china, sewer-pipe, tiles, terra-cotta work, etc.; in a word, the chief clay-working industries, except the manufacture of brick, which is reported upon under the title "Brick-making".

In addition to the tabulations as before stated, certain facts are given in some of the schedules which are not fully tabulated that are worthy of publication. The following are the rates of wages paid at the Etruria Pottery Works of East Liverpool, Ohio, manufacturers of crockery for table and toilet use:

Class of employés.	1880.	1870.	Class of employés.	1880.	1870.
Clay-maker	\$1 50	\$1 50	Kilnman	\$2 50	\$2 50
Jollyman	3 00	3 00	Packer	2 50	2 50
Mold-maker	2 50	2 50	Engineer	2 00	2 00
Turner	2 50	2 50	Laborer	1 50	1 50
Dipper	3 00	3 00	Warehouseman	1 75	1 75
Sagger-maker	2 00	2 00	Helper, female	75	75
Presser	2 25	2 25	Helper, boy	75	75

In this schedule it is stated that, of the net cost of goods produced, a little more than one-half is paid for the labor done in the factory, and three-fourths of the other half is paid for clay and stone.

In a schedule from Trenton, New Jersey, from a works making earthen-ware, the following rates are given as those paid per day to the different classes of labor in 1880:

Potters	\$2 50
Kilnmen	2 00
Laborers	1 25
Boys	50
Girls	50

This schedule contains very interesting statements as to the selling price of product and cost of labor to a unit of product, which are as follows:

Year.	SELLING PRICE.						LABOR COST.					
	Ewers, each.	Basins, each.	Chambers, each.	Plates, each.	Teas, each.	Jugs, each.	Ewers, each.	Basins, each.	Chambers, each.	Plates, each.	Teas, each.	Jugs, each.
1875	\$0 55	\$0 41	\$0 56	\$0 07	\$0 05	\$0 18	\$0 48	\$0 37	\$0 50	\$0 06	\$0 04	\$0 16
1880	40	30	42	5	4	13	36	27	38	4	3	11

The Evansville Steam Pottery, Evansville, Indiana, making stone-ware, sewer-pipe, and terra-cotta work, gives the following rates of wages for four classes of employés at those works from 1866, but without specifying what labor is performed by each class:

1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 75	\$2 75	\$2 75	\$3 00	\$3 00	\$3 00	\$3 50	\$3 50	\$3 50
1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 75	2 00	2 00	2 00
1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00
1 00	1 00	1 00	1 00	1 00	1 00	1 00	50	75	75	75	75	75	75
50	50	50	50	50	50	50	.....	.....	.....	.....	.....	.....	.....

Extra earnings or deductions.—Over-time seems to be quite common in this industry. Most of the skilled workmen are paid by the piece, and a certain number of pieces is regarded as a day's work. At many establishments this "task" can be completed quite early in the afternoon, after which extra wages can be earned.

No allowances worthy of mention are noted.

Many of the piece-workers employ under-hands or helpers, and pay them out of the price received for their labor. This has always been considered, and the rates paid to each assistant are deducted before giving the rate in the table. In a few instances, also, some of the workmen are obliged to pay small sums for tools and implements, but this would reduce wages but slightly.

Payments.—From the statements made, there seems to have been considerable difficulty prior to 1860 at some of the establishments in securing sufficient money to pay wages, and the workmen received but little cash. Very soon after the breaking out of the war, however, owing to a combination of circumstances, chief among which were the increased tariff and the risks of transportation across the sea, combined with the abundance of money, the pottery industry became more profitable, and more and more cash was paid, until finally truck was abandoned entirely.

There appears to be no regular interval of payment at pottery works. Several changes from a shorter to a longer interval are noted, as from weekly to every two weeks or monthly.

Hours of labor.—Some very interesting statements are made regarding the hours of labor, and the opinion of the proprietors in these establishments as to the shortening of hours. It is generally held that a shortening of hours would lead to imperfect work if the same relative rate of wages obtained, through a hurrying on the part of the workmen to accomplish the task and earn the same wages in the shorter hours as in the longer.

Regularity of employment.—Prior to 1860, at the establishments reporting, work was not regular, they being idle from four to five months in the coldest season of the year. During and since the war, however, work appears to have been quite regular. One schedule makes the statement that the effect of the panic of 1873 upon the pottery trade was really beneficial as to demand.

Relation of wages and labor to selling price and cost.—No general statements can be made as to the prices of product, etc. There is but little information upon this subject, and each return must be examined for itself.

Wages in Great Britain.—The following table, from the *Miscellaneous Statistics of Great Britain*, Part XI, gives the rates of wages paid in the North Staffordshire district of England, and is inserted here for the sake of comparison with our own tables. There is no indication, however, as to the class of goods manufactured at the pottery reported upon:

Description of occupations.	Employés.	Rates of wages per week.	Description of occupations.	Employés.	Rates of wages per week.
NORTH STAFFORDSHIRE DISTRICT.			NORTH STAFFORDSHIRE DISTRICT—continued.		
Clay-makers	Men	\$7 20 - \$8 47	Sagger-makers	Men	\$6 05 - \$7 26
Throwers	Men	9 08 - 11 61 $\frac{1}{2}$	Biscuit-firers	Men	10 89 - 14 52
Throwers	Lads	3 38 $\frac{1}{2}$	Biscuit-placers	Men	7 26
Throwers	Women	2 42 - 2 00 $\frac{1}{2}$	Printers	Men	6 53 $\frac{1}{2}$
Throwers	Girls	1 45 $\frac{1}{2}$	Printers	Women	2 90 $\frac{1}{2}$
Turners	Men	6 05 - 9 10 $\frac{1}{2}$	Printers	Girls	1 57 $\frac{1}{2}$
Turners	Lads	2 29 $\frac{1}{2}$	Glost-firers	Men	14 52
Turners	Women	2 42	Glost-placers	Men	7 26 - 8 47
Turners	Girls	1 45 $\frac{1}{2}$	Kilnmen	Men	8 47
Handlers	Men	7 74 $\frac{1}{2}$ - 8 71 $\frac{1}{2}$	Enamellers	Women	2 54
Pressers	Men	8 47	Enamellers	Girls	84 $\frac{1}{2}$ - 1 21
Flat-pressers	Lads and boys	1 45 $\frac{1}{2}$ - 1 08 $\frac{1}{2}$	Burnishers	Women	1 4 $\frac{1}{2}$ - 1 03 $\frac{1}{2}$
Hollow-ware pressers	Men	7 26 - 8 47	Gilders	Men	6 05
Hollow-ware pressers	Lads and boys	1 45 $\frac{1}{2}$ - 1 08 $\frac{1}{2}$	Laborers	Men	3 87 $\frac{1}{2}$
Molders	Men	7 98 $\frac{1}{2}$ - 9 08			

Relative rates of wages in England and in the United States.—Through the kindness of a manufacturer in Trenton, New Jersey, I have received the following tables comparing the rates of wages paid to 13 classes of employés at 15 manufactories in Staffordshire, England, and the same number in Trenton, New Jersey. The wages in Trenton were prepared by the manufacturers of that district; those in England by Mr. Edwin Powell, chairman of the Manufacturers' Association, of Staffordshire, England. The English wages are for 1881, the American for 1882.

STATISTICS OF WAGES—POTTERY AND EARTHEN-WARE.

Table showing average net earnings, after all deductions for attendants, etc., of the workmen employed at 15 manufactories, Staffordshire, England.

Number.	Flat-pressers.	Dish-makers.	Cup-makers.	Saucer-makers.	Hand-basin makers.	Hollow-ware pressers.	Hollow-ware presser jiggers.	Printers.	Ovenmen.	Sagger-makers.	Mold-makers.	Turners.	Handlers.
1.....	\$7 70 ¹ / ₂	\$7 50 ¹ / ₂	\$10 40 ¹ / ₂	(a)	(b)	\$7 26	.....	\$7 38	\$6 65 ¹ / ₂	\$7 00 ¹ / ₂	\$8 95 ¹ / ₂	\$7 62 ¹ / ₂	\$8 10 ¹ / ₂
2.....	6 20	6 65 ¹ / ₂	14 52	\$5 98 ¹ / ₂	\$8 10 ¹ / ₂	7 60 ¹ / ₂	\$9 88	5 83 ¹ / ₂	6 99 ¹ / ₂	7 38	8 87 ¹ / ₂	7 32	6 00 ¹ / ₂
3.....	7 32	6 67 ¹ / ₂	(a)	7 26	6 53 ¹ / ₂	10 26 ¹ / ₂	9 88	4 86	6 65 ¹ / ₂	.....	12 10	6 63 ¹ / ₂	9 88
4.....	9 68	9 68	7 26	10 89	9 10 ¹ / ₂	.....	.....	6 53 ¹ / ₂	6 65 ¹ / ₂	10 89	10 89	7 26	7 20
5.....	6 67 ¹ / ₂	9 65 ¹ / ₂	.....	7 46	10 80 ¹ / ₂	9 25 ¹ / ₂	8 57	7 13 ¹ / ₂	7 98 ¹ / ₂	.....	8 47	9 82	7 60 ¹ / ₂
6.....	6 20 ¹ / ₂	14 52	7 01 ¹ / ₂	7 50 ¹ / ₂	.....	7 74 ¹ / ₂	13 80	6 53 ¹ / ₂	6 77 ¹ / ₂	6 53 ¹ / ₂	11 37 ¹ / ₂	8 71 ¹ / ₂	9 68
7.....	7 23 ¹ / ₂	7 38	(a)	(a)	7 94 ¹ / ₂	7 74 ¹ / ₂	10 10 ¹ / ₂	7 05 ¹ / ₂	7 21 ¹ / ₂	9 63 ¹ / ₂	7 62 ¹ / ₂	9 82	7 42
8.....	8 71 ¹ / ₂	7 50 ¹ / ₂	.....	.....	8 89 ¹ / ₂	7 30	9 68	.....	6 65 ¹ / ₂	(c)	11 93 ¹ / ₂	.....	6 77 ¹ / ₂
9.....	7 19 ¹ / ₂	8 85 ¹ / ₂	6 91 ¹ / ₂	6 89 ¹ / ₂	9 07 ¹ / ₂	8 02 ¹ / ₂	12 03 ¹ / ₂	6 13	6 65 ¹ / ₂	8 87 ¹ / ₂	10 04 ¹ / ₂	6 69 ¹ / ₂	(a)
10.....	9 07 ¹ / ₂	7 20	9 68	9 47 ¹ / ₂	.....	9 43 ¹ / ₂	.....	6 77 ¹ / ₂	6 05 ¹ / ₂	7 74 ¹ / ₂	8 25 ¹ / ₂	8 71 ¹ / ₂	10 10 ¹ / ₂
11.....	6 11	11 61 ¹ / ₂	6 39 ¹ / ₂	6 21	11 53 ¹ / ₂	7 82 ¹ / ₂	10 97	6 29 ¹ / ₂	6 80 ¹ / ₂	7 31	10 76 ¹ / ₂	7 50 ¹ / ₂	7 74 ¹ / ₂
12.....	7 44	14 52	9 68	10 64 ¹ / ₂	16 53 ¹ / ₂	6 60 ¹ / ₂	20 57	.....	7 26	7 26	10 78 ¹ / ₂	.....	6 00 ¹ / ₂
13.....	9 19 ¹ / ₂	10 89	10 69 ¹ / ₂	8 47	7 74 ¹ / ₂	7 26	10 10 ¹ / ₂	7 56 ¹ / ₂	6 65 ¹ / ₂	12 10	10 46 ¹ / ₂	.....	9 43 ¹ / ₂
14.....	7 98 ¹ / ₂	12 70 ¹ / ₂	7 98 ¹ / ₂	9 31 ¹ / ₂	8 47	8 47	14 39 ¹ / ₂	.....	6 65 ¹ / ₂	7 62 ¹ / ₂	13 18 ¹ / ₂	.....	12 94 ¹ / ₂
15.....	8 47	8 83 ¹ / ₂	(a)	8 67	9 35 ¹ / ₂	7 91 ¹ / ₂	9 13 ¹ / ₂	.....	6 65 ¹ / ₂	.....	9 17 ¹ / ₂	.....	(a)
Total.....	115 29 ¹ / ₂	144 24 ¹ / ₂	96 55 ¹ / ₂	98 78 ¹ / ₂	114 25 ¹ / ₂	112 88 ¹ / ₂	130 03 ¹ / ₂	72 10 ¹ / ₂	103 01 ¹ / ₂	93 01 ¹ / ₂	153 48 ¹ / ₂	80 09 ¹ / ₂	169 00 ¹ / ₂

a Women.

b With dishes.

c Contract.

Table showing average net earnings per man per week, all deductions for attendants and other purposes being made.

Flat-presser.....	\$7 70
Dish-maker.....	9 62
Cup-maker.....	9 92
Saucer-maker.....	7 93
Hand-basin maker.....	9 63
Hollow-ware presser.....	8 14
Hollow-ware presser jigger.....	11 62
Printer.....	6 55
Ovenman.....	6 86
Sagger-maker.....	8 46
Mold-maker.....	10 23
Turner.....	8 00
Handler.....	8 39

113 04

The average earnings per man per week of the 13 classes of labor is \$8 69.

The 15 manufacturers included in the above table represent all markets of the potting trade, and in the case of each separate branch the figures show the average of the wages earned at each of the 15 manufactories.

Table showing average weekly wages for three months at 15 different potteries at Trenton, New Jersey, after all deductions for attendants, etc.

Number.	Plate-makers.	Dish-makers.	Cup-makers.	Saucer-makers.	Basin-makers.	Hollow-ware jiggers.	Hollow-ware pressers.	Kiln-men.	Sagger-makers.	Mold-makers.	Turners.	Handlers.	Printers.	Totals.	Average.
1.....	\$16 00	\$18 00	None.	\$16 00	\$18 00	None.	\$21 00	\$12 00	.....	\$19 00	\$17 00	\$ 5 00	\$17 00	\$169 50	\$10 95
2.....	22 00	20 00	\$20 00	17 00	16 00	\$25 00	14 00	12 75	\$18 00	22 00	18 00	14 00	13 50	232 25	17 86
3.....	13 65	26 14	17 00	17 00	26 11	13 57	13 09	13 03	12 71	17 37	None.	11 43	None.	181 05	10 73
4.....	22 00	20 00	20 00	20 00	20 00	24 00	21 00	12 00	12 00	18 00	20 00	15 00	None.	224 00	18 07
5.....	20 60	19 71	23 37	28 41	.....	None.	20 25	17 44	31 20	24 59	13 72	9 61	None.	210 85	21 69
6.....	16 00	14 25	13 25	13 50	13 75	24 00	13 00	12 00	21 00	22 25	15 25	13 50	13 50	205 25	15 79
7.....	20 22	11 61	15 70	15 79	None.	22 23	24 90	.....	11 30	19 79	15 69	18 37	None.	170 15	17 62
8.....	10 80	17 84	26 81	16 04	16 02	21 05	20 28	12 00	24 03	20 16	17 30	11 69	12 00	244 60	18 82
9.....	19 60	10 00	14 00	15 00	None.	None.	14 00	12 00	20 00	15 00	16 50	14 53	None.	156 50	15 65
10.....	15 60	20 00	14 50	15 25	22 25	22 50	13 50	12 00	20 00	22 50	16 60	18 00	18 00	230 00	17 69
11.....	23 50	20 98	29 40	None.	None.	None.	17 65	17 40	21 23	30 61	10 60	18 33	12 00	207 80	20 78
12.....	17 47	17 33	34 75	23 85	None.	20 84	23 40	.....	15 61	None.	21 28	27 11	None.	201 07	22 41
13.....	27 47	25 10	None.	30 17	26 12	21 65	16 38	None.	20 48	10 63	10 44	20 84	10 09	234 28	21 90
14.....	22 12	24 52	14 25	13 53	14 05	None.	17 47	13 50	20 30	20 00	17 28	13 09	12 00	202 17	16 85
15.....	20 20	20 00	13 60	18 54	24 99	24 91	17 00	12 00	22 64	22 60	16 20	15 01	13 50	242 74	18 67
Total.....	304 48	291 48	225 74	260 14	107 32	218 85	268 48	158 12	270 64	203 67	237 62	249 37	122 00	3,127 81	277 48
American average.....	20 30	19 43	10 67	18 58	19 73	21 89	17 90	13 18	19 33	20 79	16 97	16 62	13 56	.....	18 50
English average.....	7 70	9 02	9 92	7 93	9 66	11 62	8 14	6 86	6 46	10 23	8 00	8 39	6 55	.....	8 19

NOTE.—About 133 per cent. higher wages than English.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Goodwin Brothers, East Liverpool, Ohio.

[POTTERY.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.												
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Engineer	Day	\$1 75- 2 00	\$1 75- 2 00	\$1 75- 2 00	\$2 00- 2 50	\$2 00- 2 50	\$2 00- 2 50	\$2 00- 2 50	\$2 00- 2 50	\$2 00- 2 50	\$2 00- 2 50	\$2 00- 2 50	\$2 00- 2 50	
Fireman	do	2 75	2 75	2 75	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	
Mold-maker	do	2 50- 5 00	2 50- 5 00	2 50- 5 00	3 00- 0 00	3 00- 0 00	3 00- 0 00	3 00- 0 00	3 00- 0 00	3 00- 0 00	3 00- 0 00	3 00- 0 00	3 00- 0 00	
Clay-maker	do	2 00	2 00	2 00	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	
Presser	do	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	
Saggerman	do	2 00- 2 50	2 00- 2 50	2 00- 2 50	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	2 50- 3 00	
Jiggerman	do	3 00- 4 00	3 00- 4 00	3 00- 4 00	3 00- 4 00	3 00- 4 00	3 00- 4 00	3 00- 4 00	3 00- 4 00	3 00- 4 00	3 00- 4 00	3 00- 4 00	3 00- 4 00	
Dish-maker	do	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	2 00- 3 00	
Ovenman	do	2 00	2 00	2 00	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	
Dipper	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	
Packer	do	2 00- 2 50	2 00- 2 50	2 00- 2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	
Helper, woman	do	60- 1 00	60- 1 00	60- 1 00	60- 1 00	60- 1 00	60- 1 00	60- 1 00	60- 1 00	60- 1 00	60- 1 00	60- 1 00	60- 1 00	
Helper, girl	do	40- 75	40- 75	40- 75	40- 75	40- 75	40- 75	40- 75	40- 75	40- 75	40- 75	40- 75	40- 75	
Helper, boy	do	40- 1 00	40- 1 00	40- 1 00	40- 1 00	40- 1 00	40- 1 00	40- 1 00	40- 1 00	40- 1 00	40- 1 00	40- 1 00	40- 1 00	
Teamster (with two horses and wagon).	do	3 50- 5 00	3 50- 5 00	3 50- 5 00	4 00- 7 00	4 00- 7 00	4 00- 7 00	4 00- 7 00	4 00- 7 00	4 00- 7 00	4 00- 7 00	4 00- 7 00	4 00- 7 00	
Laborer	do	1 25- 1 50	1 25- 1 50	1 25- 1 50	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	

Classes of employes.	Unit of payment.	DATES.												
		1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.
Engineer	Day .....	.....	.....	.....	.....	\$2 00	.....	.....	.....	.....	.....	.....	.....	.....
Fireman	do .....	.....	.....	.....	.....	2 50	\$1 75	\$1 75	\$1 75	.....	.....	.....	\$1 75	.....
Mold-maker	do .....	.....	.....	.....	.....	3 00	2 00	2 00	2 00	.....	.....	.....	2 00	.....
Clay-maker	do .....	.....	.....	.....	.....	2 00	1 50	1 50	1 50	.....	.....	.....	1 50	.....
Presser	do .....	.....	.....	.....	.....	2 00	1 50	1 50	1 50	.....	.....	.....	1 50	.....
Saggerman	do .....	.....	.....	.....	.....	2 50	1 50	1 50	1 50	.....	.....	.....	1 50	.....
Jiggerman	do .....	.....	.....	.....	.....	2 50	2 00	2 00	2 00	.....	.....	.....	2 00	.....
Dish-maker	do .....	.....	.....	.....	.....	2 50	1 50	1 50	1 50	.....	.....	.....	1 50	.....
Ovenman	do .....	.....	.....	.....	.....	2 00	1 25	1 25	1 25	.....	.....	.....	1 25	.....
Dipper	do .....	.....	.....	.....	.....	2 00	1 50	1 50	1 50	.....	.....	.....	1 50	.....
Packer	do .....	.....	.....	.....	.....	2 50	1 50	1 50	1 50	.....	.....	.....	1 50	.....
Helper, woman	do .....	.....	.....	.....	.....	60- 75	30- 50	30- 50	30- 50	.....	.....	.....	30- 50	.....
Helper, girl	do .....	.....	.....	.....	.....	40- 60	20- 40	20- 40	20- 40	.....	.....	.....	20- 40	.....
Helper, boy	do .....	.....	.....	.....	.....	40- 60	20- 40	20- 40	20- 40	.....	.....	.....	20- 40	.....
Teamster (with two horses and wagon).	do .....	.....	.....	.....	.....	4 50	2 50	2 50	2 50	.....	.....	.....	2 50	.....
Laborer	do .....	.....	.....	.....	.....	1 75- 2 00	75	75	75	.....	.....	.....	75	.....

REMARKS.—From 1856 to 1877 this establishment made only brown and yellow ware from materials from the hills near the works. In the latter year the manufacture of C. C. (white earthen-ware) was begun. These rates of wages, it is stated, may be taken as representing the rates paid in this industry in East Liverpool.

Over-time is made occasionally, but the earnings derived from it have not been included in the above table.

Employes pay nothing for tools, except in the case of pressers and jiggermen, who furnish their own sponges. This, however, is a small item. The wages given in the table are those paid after deducting the wages of helpers and under-hands.

Payments were weekly as late as 1874, when the interval was changed to two weeks.

It is remarked in the statement appended to the above tabulation that before 1860, payments were chiefly in store-orders, but immediately after the first issue of greenbacks the system of cash payments was adopted, the scarcity of workmen and the unusual volume of currency making it easier to pay in cash. This method also proved more satisfactory to the employes.

The usual hours of labor are from 7 a. m. to 6 p. m., with 20 minutes for lunch between 9 and 10 a. m. and 1 hour for dinner. Ovenmen, dippers, and their helpers work only till 5 p. m. On Saturday all hands stop work at 5 p. m., and on pay-day at 4 p. m., no deduction being made for the shorter hours; all having a certain amount of work to do in a day, and in most cases they are able to make over-time within the 10 hours.

Goodwin Brothers, East Liverpool, Ohio—Continued.

The opinion is expressed, however, that a decrease in hours would result with some workmen in crowding the amount of work now considered a day's work into the decreased time, causing inferior workmanship and imperfect wares, while others would work the full hours of the day and make over-time. There is, it is stated, at this, as at other potteries, a certain amount of work to be done for a day's wages, and in most cases the hands accomplish the work by 2 or 3 o'clock, and make a quarter of a day extra before 6 p. m. This is the case with the ovenmen and the ware brushers and cleaners, who invariably make extra or over-time within the usual 10 hours. It is also thought that a shortening of the hours of

labor would have a bad influence on the morals of the men and boys, unless drinking saloons could be driven out of existence. The works were in operation 8 months a year from 1856 to 1860 ; 11 1/2 months from 1860 to 1873. During the panic of 1873 but 2 months were lost, when the pottery business, unlike others, became more than usually flourishing, and full time has been made ever since. The impetus thus given was due to the fact that merchants who had previously been importers began to buy American goods, so as to get their goods on short notice, besides having the advantage of 3 months' credit, the terms of sale by English manufacturers being cash on the arrival of goods at New York.

Knowles, Taylor & Knowles, East Liverpool, Ohio.

[POTTERY.]
(Continued on next page.)

Classes of employes.	Unit of payment.	DATES.													
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Clay-maker	Day	\$2 00	\$2 00	\$2 00	\$2 50	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00
Sagger-maker	do	2 25	2 25	2 25	2 75	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Presser	do	2 50	2 50	2 50	2 50	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Dish-maker	do	2 50	2 50	2 50	2 50	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25
Jiggerman	do	3 50	3 50	3 50	3 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Dipper	do	2 50	2 50	2 50	2 50	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Kilnman	do	2 00	2 00	2 00	2 25	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Packer	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Mold-maker	do	3 50	3 50	3 50	4 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Engineer	do	2 00	2 00	2 00	2 25	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Fireman	do	2 75	2 75	2 75	3 00	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Laborer	do	1 50	1 50	1 50	2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00
Teamster (two horses)	do	4 50	4 50	4 50	5 50	4 50	4 50	4 50	4 50	4 50	4 50	4 50	4 50	4 50	4 50
Woman	do	80	80	80	75	65	65	65	65	65	65	65	65	65	65
Girl	do	60	60	60	60	50	50	50	50	50	50	50	50	50	50
Boy	do	60	60	60	60	50	50	50	50	50	50	50	50	50	50

Classes of employes.	Unit of payment.	DATES.													
		1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.
Clay-maker	Day	\$2 00	\$2 00	\$2 00	\$2 00	.....	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	.....
Sagger-maker	do	2 50	2 50	2 50	2 50	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	.....
Presser	do	2 00	2 00	2 00	2 00	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	.....
Dish-maker	do	2 25	2 25	2 25	2 25	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	.....
Jiggerman	do	2 50	2 50	2 50	2 50	.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	.....
Dipper	do	2 00	2 00	2 00	2 00	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	.....
Kilnman	do	2 00	2 00	2 00	2 00	.....	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	.....
Packer	do	2 50	2 50	2 50	2 50	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	.....
Mold-maker	do	3 00	3 00	3 00	3 00	.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	.....
Engineer	do	2 00	2 00	2 00	2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fireman	do	2 50	2 50	2 50	2 50	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	.....
Laborer	do	1 75- 2 00	1 75- 2 00	1 75- 2 00	1 75- 2 00	.....	75	75	75	75	75	75	75	75	.....
Teamster (two horses)	do	4 50	4 50	4 50	4 50	.....	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	.....
Woman	do	65	65	65	65	.....	40	40	40	40	40	40	40	40	.....
Girl	do	50	50	50	50	.....	30	30	30	30	30	30	30	30	.....
Boy	do	50	50	50	50	.....	30	30	30	30	30	30	30	30	.....

REMARKS.—This establishment manufactures plain white and decorated ironstone china. Prior to 1872 only brown and yellow ware were made; since that time white ware has been manufactured. At the time the return was made the firm employed about 170 people—men, boys, women, and girls. The schedule contains the following remarks with regard to the tariff on goods manufactured: "Our business is protected by a duty of 40 per cent., dating back to about 1863, previous to which time but little white crockery was

made in the United States. This duty, with the high price of gold during the war, gave to the business a start which it could not have had otherwise. The result is that now about one-half of the white ware consumed in the United States is home production, the other half foreign, and the price of goods to the consumer to-day [1880], owing to competition with English goods, is 35 per cent. less than it was previous to the placing of the duty. From the statement under "cost of production", it will be seen that our profits are small. Clay, flint, and spar in the United States are abundant, much also

Knowles, Taylor & Knowles, East Liverpool, Ohio—Continued.

being of fine grade, equal to any used in Europe. With temporarily a better protection on crockery, the time would soon come when most of the crockery consumed here would be of home production. A better protection would encourage others to go into the business; the demand for raw material would cause the opening of new beds, and a better system of working them, which is now done only in the summer months. New beds or mines worked the year round, with a stronger demand than at present, would lessen the cost of material, and consequently the cost of goods, and in a few years the business would be on such a solid basis, with clay mines fully developed and worked, that the bulk of the duty could be taken off. But, like every new intricate branch of manufacturing in competition with the low labor of Europe, it must, if it succeed, be protected until it is fully developed.

"On the other hand, a reduction in the duty would be to the business a blow from which it could hardly recover."

At the present time wages are increased 10 per cent. by over-time.

There are no allowances. The tools are, as a rule, furnished by the manufacturer, except a few articles, such as sponges, etc., which are of trifling cost, and do not affect the table of wages given.

From 1855 to 1860 the proprietors state that they paid "whenever they had enough of anything to pay with, seldom any money". Since 1860 payments have been fortnightly; from 1860 to 1865 one-half in cash and one-half in store-orders; from 1865 to 1870 mostly in cash; since 1870 all cash has been paid. The use of store-orders was discontinued as the volume of currency was increased by the war; labor also having become scarce, the men demanded cash, and the manufacturers were forced to demand prompt cash for goods sold.

The hours of labor are 9½ per day, work commencing at 7 a. m. and concluding at 6 p. m., with fifteen minutes at 10 a. m. for lunch, and an hour at noon. It is believed that a decrease in the hours of labor would simply be an increase in the price of labor. As a rule, the schedule remarks, potteries are worked up to their full capacity, and a reduction in hours of labor would result in one of three things, viz, a reduction in the quantity of goods manufactured, increased capacity with additional machinery, or sufficient over-time work to make up the present hours. The consequence would be that the present capacity would be kept up by the employes working their present hours, requiring pay for the difference between the decrease and the present hours, which would simply be an increase in wages. There is no difficulty in regulating wages on the

present 10-hour system. To adopt a new basis would disorganize the business materially, and cause an advance at a time when not required or when the manufacturer could not afford it. It is also thought that a decrease in the hours of labor would have an injurious effect upon the habits and character of employes.

Previously to 1863 the works were run 7 months each year, during which time an average of full time was made; from 1863 to 1870 10 months a year were made. Since 1870 the works have run 12 months each year, except about two weeks for repair during the holidays. The short time was caused by dullness of trade in the winter months and middle of summer, owing to the importation of foreign goods before protection was granted to this industry by the government.

There have been no strikes or lockouts for some time. Some months prior to the census year the kilnmen made a demand for an increase of wages, which was refused as being unreasonable and uncalled for. The places of the strikers were filled by apprentices, and with these and the assistance of the few old hands in this branch that remained, and as the hands at other potteries refused to unite with the strikers, the strike was broken in six weeks. While the loss to the manufacturer was considerable, the men, as usual, suffered more.

Labor has varied in efficiency somewhat as wages have fluctuated, the workmanship being better in times of low wages, when men were less independent and more anxious to retain situations.

Several labor-saving machines have been introduced, one of which in particular has obviated the necessity of skilled labor in the making of clay ware. The machine is called a "pull-down," to which is attached a handle and profile tool, which forms the outside of certain kinds of ware, viz, plates, saucers, cups, individual butters, etc., and the inside of chambers, cups, bowls, etc., on a mold revolving on a machine for that purpose. With but little practice unskilled labor can operate this machine, and produce results equal to those for which skilled labor was formerly required. A greater quantity, also, is produced in a given time and at a much less cost, besides removing manufacturers from the thralldom under which skilled labor had formerly placed them.

Wages constitute about 60 per cent. of selling price, and wages, material, interest, and other expenses 90 per cent. of selling price.

The trade is considered healthful, as much as any indoor work, and accidents are rare.

Cartwright Brothers, East Liverpool, Ohio.

[POTTERY.]

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.													
		1860.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.
Fireman	Day	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$2 75	\$3 00	\$3 00	\$3 00	\$3 00
Mold-maker	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 50	3 50	3 50	3 50
Clay-maker	do	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50	2 50
Presser	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 25	2 25	2 25	2 25
Sagger-maker	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 75	2 75	2 75	2 75
Jiggerman	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 50	3 50	3 50	3 50
Dish-maker	do	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50	2 50
Kilnman	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 25	2 25	2 25	2 25
Dipper	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Packer	do	2 50	2 50	2 50	2 50	3 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Warehouseman	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Woman	do	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Girl	do	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Boy	do	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Thrower	do	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	4 00	4 00	4 00	4 00
Turner	do	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50	2 50
Handler	do	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 50	2 50
Laborer	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75

STATISTICS OF WAGES—POTTERY AND EARTHEN-WARE.

Cartwright Brothers, East Liverpool, Ohio—Continued.

Classes of employes.	Unit of payment.	DATES.													
		1860.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.
Fireman.....	Day...	\$3 00	\$1 00	\$2 50	\$2 50	.....	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50
Mold-maker.....	do...	3 50	3 50	2 50	2 50	.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Clay-maker.....	do...	2 50	2 50	2 00	2 00	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Pressor.....	do...	2 25	2 25	2 00	2 00	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Sagger-maker.....	do...	2 75	2 75	2 50	2 50	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Jiggerman.....	do...	3 50	3 50	2 60	2 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dish-maker.....	do...	2 50	2 50	2 25	2 25	.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Kilnman.....	do...	2 25	2 25	2 00	2 00	.....	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Dipper.....	do...	2 50	2 50	2 25	2 25	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Packer.....	do...	2 50	2 50	2 25	2 25	.....	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Warehouseman.....	do...	2 00	2 00	2 00	2 00	.....	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Woman.....	do...	80	80	75	75	.....	50	50	50	50	50	50	50	50	50
Girl.....	do...	50	50	40	40	.....	33	33	33	33	33	33	33	33	33
Boy.....	do...	60	60	50	50	.....	33	33	33	33	33	33	33	33	33
Thrower.....	do...	4 00	4 00	3 50	3 50	.....	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Turner.....	do...	2 50	2 50	2 25	2 25	.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Tandler.....	do...	2 50	2 50	2 25	2 25	.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Laborer.....	do...	1 75	1 75	1 50	1 50	.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—At these works Rockingham yellow- and white-lined ware is produced.

The firm provides all tools, etc., except a few articles which do not cost the workmen over \$5 a year.

From the establishment of the pottery, about 1840, until 1850, very little cash was paid, store-orders being given for labor. From 1850 to 1860, half cash and half orders were the rule. From 1860 to 1864 the proportion of cash was greater, and since 1864 no store-orders have been used; the cause for their abandonment being scarcity of workmen during the war, and improvement in the trade, making it possible for manufacturers to demand prompt pay for goods. Since 1864 payments have been made every 2 weeks.

Clay-makers work 11 hours a day, dipppers 8 hours, and all other classes from 9 to 10.

This firm believes that a change in the hours of labor would not be advisable. Should the number of hours per day be decreased, the workmen would expect a sufficient increase in the rates per piece to make the average daily earnings what they are now, which,

owing to the great competition with English goods and the present tariff basis, the manufacturers could not grant.

From 1856 to 1860 the works averaged 9 months a year; from 1861 to 1865, 9½ months; from 1866 to 1870, 10 months; from 1871 to 1875, 11 months; from 1876 to 1880, 11½ months; and no time was lost in the census year.

A demand for 10 per cent. reduction from the high prices received during the war was made by the firm in 1871, which resulted in a lockout for nearly 2 months, and final victory for the manufacturers.

Wages are about 65 per cent. of total cost. Wages, materials, repairs, etc., are about 90 per cent. of selling prices.

There has been introduced into this pottery a machine for making all kinds of round ware, such as bowls, plates, etc., the effect of which has been to do away with skilled labor to a certain extent and to lessen the cost of goods.

With good ventilation and care to create as little dust as possible, the trade is a very healthful one.

Isaac Ogden & Son, Newark, New Jersey.

[SEWER-PIPE, FIRE-CLAY, ETC.]

Classes of employes.	Unit of payment.	DATES.																	
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.
Engineer.....	Day.....	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 25	\$2 25	\$2 25	\$2 25	.....	.....	.....	.....	.....	.....	.....	.....
Laborer.....	do.....	1 25	1 00	1 00	1 25	1 25	1 50	1 50	1 75	1 75	1 75	\$1 75	\$1 75	\$1 75	\$1 50	\$1 50	\$1 50	\$1 50	\$1 00

REMARKS.—These works make drain-pipe.

Since 1865 payments have been weekly.

The statement regarding hours of labor, which dates back to 1860, gives a day's work as 10 hours.

From 1866 to 1870 the works were in operation 12 months a year; for the next five years they averaged but 10 months, and since 1876, 11 months. The cause of irregularity was fluctuation in demand.

Following are the prices, labor, cost, etc., per foot of 6-inch pipe:

Year.	Selling price.	Labor cost.	Percentage of wages to cost.
1865.....	\$0 20	.....	Per cent.
1870.....	24	\$0 06	50
1875.....	12	3	50
1880.....	12	3	65

N. U. Walker, Liverpool Township, Ohio.

[SEWER-PIPE, FIRE-CLAY, ETC.]

Classes of employes.	Unit of payment.	DATES.									
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.
Foreman	Month ..	\$65 00	\$65 00	\$65 00	\$65 00	\$70 00	\$75 00	\$83 00	\$83 00	\$83 00	\$83 00
Engineer	Day	1 75	1 50	1 60	1 75	2 10	2 00	2 00	2 00	2 00	2 00
Miner	do	1 40	1 30	1 40	1 50	1 00	1 75	1 75	1 75	1 75	1 75
Brick-molder	do	1 50	1 50	1 50	1 75	2 00	2 00	2 00	2 25	2 25	2 00
Pressman	do	2 50	2 25	2 00	2 00	2 25	2 50	2 75	2 75	2 75	2 75
Burner, kiln	do	2 25	2 25	2 00	2 00	2 60	2 00	2 25	2 00	2 00	2 00
Kiln-setter	do	2 25	2 25	2 60	2 00	2 00	2 00	2 25	2 00	2 00	2 00
Clay-temperer	do	1 35	1 30	1 25	1 15	1 25	1 35	1 50	1 40	1 40	1 50
Blacksmith	do	2 00	1 75	1 75	1 60	1 75	1 75	2 00	2 00	2 00	2 00
Carpenter	do	1 75	1 50	1 60	1 70	1 75	1 75	1 80	2 00	2 10	2 00
Laborer	do	1 15	1 10	1 60	1 15	1 25	1 35	1 50	1 50	1 50	1 50
Boatman	do	1 50	1 50	1 40	1 40	1 50	1 75	2 00	2 00	2 00	2 00

Classes of employes.	Unit of payment.	DATES.									
		1870.	1860.	1868.	1867.	1860.	1865.	1864.	1863.	1862.	1861.
Foreman	Month ..	\$65 00	\$58 50	\$58 50	\$58 50	\$58 50	\$58 50	\$52 00	\$52 00	\$52 00	\$52 00
Engineer	Day	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 10	1 10	1 10
Miner	do	1 75	1 75	1 50	1 35	1 35	1 35	1 25	1 10	1 00	1 00
Brick-molder	do	2 50	2 50	2 25	1 88	1 75	1 75	1 70	1 50	1 50	1 50
Pressman	do										
Burner, kiln	do										
Kiln-setter	do										
Clay-temperer	do										
Blacksmith	do										
Carpenter	do	2 00	2 00	2 00	1 75	1 75	1 75	1 50	1 50	1 50	1 25
Laborer	do	1 50	1 50	1 75	1 00	1 50	1 40	1 25	1 20	1 00	1 00
Boatman	do	2 50									

REMARKS.—This establishment makes fire-brick, sewer-pipe, terra-cotta goods, etc.

Extra earnings are occasionally made by working over-time. Kiln-burners often make 40 days in the month, and piece-workers can do the same. These would increase the wages given above from \$1 to \$15 per month.

The only allowance is cheap house-rent, which is offered as an inducement to have the men near the work, for the convenience of the proprietors.

Miners of clay furnish their own helpers and mining tools. In mining clay the contractor is paid by the foot of clay mined, and receives the rate minus helpers' wages, powder, tools, etc., the helpers being paid from the office.

Employes receive $\frac{1}{4}$ of their wages in cash, $\frac{3}{4}$ in merchandise and coal, and $\frac{1}{4}$ in rent. Store-orders were abandoned in 1866 for the proprietors' advantage. Payments were weekly in 1860, and every two weeks from 1865 to 1880, when the interval was changed to a month.

The hours of labor since 1860 have been as follows: Foreman, 11; engineer, 12 to 14; miners, boatmen, and burners, 12; clay-molders, 10 to 12; carpenter and laborer, 10. In a few instances, for a month

or two in winter, the men have worked but 9 hours a day, but the proprietor does not approve of this under ordinary circumstances.

From 1861 to 1865 the works were operated 8 months a year; from 1876 to 1870, 9 months; 1871 to 1875, 11 months; 1876, through the census year, 12 months.

There have been several strikes, lasting from 2 to 6 days, for higher wages. The results have been partial advances, and the discharge of the men who could be spared, with the leaders of the strikers.

The prices of fire-clay are given as \$2, \$2 50, \$2 50, \$2 60, and \$2 25, respectively, for the years 1860, 1865, 1870, 1875, and 1880.

An increase in the efficiency of labor has been noted as arising from the intelligence of the workmen.

About 1865 there were brought into use in these works elevators for raising the clay, a dry and a wet pan to grind and prepare it, and a machine for molding it into brick.

Tempering-mills and steam-presses were introduced for making pipe. The effect of these additions has been to lessen labor, to improve output, and to decrease cost of production.

The trade is not unhealthful, and but one fatal accident and two slight ones have occurred within 20 years.

STATISTICS OF WAGES—POTTERY AND EARTHEN-WARE.

John Francy & Sons, Sloan's Station, Ohio.

[SEWER-PIPE, FIRE-CLAY, ETC.]

Classes of employes.	Unit of payment.	DATES.							
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.
Foreman	Month..	\$58 50	\$58 50	\$52 00	\$52 00	\$52 00	\$52 00	\$52 00	\$52 00
Engineer	Day	1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 50
Miner, clay	do	2 25	2 25	2 00	2 00	2 00	2 00	2 00	2 00
Miner, coal	do	2 25	2 25	2 00	2 00	2 00	2 00	2 00	2 00
Brick-molder	do	1 75	1 75	1 50	1 50	1 50	1 50	1 50	1 50
Terra-cotta molder	do	2 00	2 00	2 00	.....	.....	.....	.....	.....
Pressman	do	1 75	1 75	1 50	.....	.....	.....	.....	.....
Burner	do	1 75	1 75	1 75	1 50	1 50	1 50	1 50	1 50
Kiln-setter	do	1 75	1 75	1 75	1 50	1 50	1 50	1 50	1 50
Laborer	do	1 25	1 25	1 00	1 00	1 00	1 25	1 50	1 50

REMARKS.—At these works fire-brick, tile, sewer-pipe, and terra-cotta goods are made.

By working over-time and holidays employes have the opportunity of adding about 10 per cent. to the wages given in the above table.

All payments are monthly and in cash.

The hours for labor are 8 for brick and terra-cotta molders and 10 for all other classes. Prior to 1865 it was customary to work from sunrise to sunset, receiving pay for time lost in wet weather. About that year the proprietors making this return entered into an arrangement with their men by which they were to work 10 hours a day and lose the wet days, which has proved satisfactory to both parties.

Employment is regular 12 months in the year. There have been no strikes or lockouts.

There has been no increase in the efficiency of labor, as there is, so it is stated, a lack of interest among the men who fail to see that the success of the business would benefit them as well as their employers.

Among the labor-saving machinery introduced is a pan which has replaced the rolls formerly used to crush clay, and has in-

creased speed fourfold; a pug-mill for mixing the clay after it is ground, and a brick-machine for molding brick. Under the old method of molding by hand three men and one boy could mold 3,500 bricks per day, and with this machine ten men and one boy will take the clay from the clay pile in its crude state and finish 20,000 bricks in a day.

Aside from lessening labor, as remarked above, the effect of these machines has been to decrease the cost of production and to increase number of employes.

The following table gives the selling prices of certain products at this establishment for the years 1870, 1875, and 1880:

Year.	Brick, per 1,000.	6-inch pipes, per foot.	8½ by 8½ lining, per foot.
1870.....	\$12 00	.....	.....
1875	8 00	\$0 15	\$0 20
1880.....	12 00	15	20

The trade is not unhealthful or dangerous.

POWDER.

There are but two returns of wages in this industry, in neither of which are the supplemental statements of sufficient importance to call for any general remarks.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

Hazard Powder Company, Enfield, Connecticut.

Classes of employes.	Unit of pay-ment.	DATES.																		
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1860.	1868.	1867.	1866.	1865.	1864.	1863.	1862.
Powder-hand	Day....	\$1 73										\$2 00								
Refiner	do	1 54										1 73								\$1 28
Mechanic	do	2 25										2 75								1 15
Engineer	do	2 50										3 00								1 75
Cooper	do	2 00										2 25								2 00
Laborer	do	1 35										1 75								1 50

REMARKS.—There are a few opportunities for over-time in the busy seasons. These would increase wages about 5 per cent., and have not been included in the above table.

Payments are in cash and monthly.

Employés have a certain task assigned to them each day, which they accomplish generally in from 6 to 7 hours, and are seldom in the mill after 2 p. m., except when working over-time.

From 1866 to 1871 or 1872 the mill ran 12 months a year, but since the panic of 1873 about a month has been lost each year from depression of business. There have been no strikes or lockouts at this establishment.

The trade is not unhealthful, but is dangerous, as there is always more or less risk of explosions by reason of machinery getting out of order, etc.

An establishment in Ohio.

Classes of employes.	Unit of payment.	DATES.		Classes of employes.	Unit of payment.	DATES.	
		1880.	1870.			1880.	1870.
Superintendent	Day....	\$3 00		Operative	Day....	\$1 25- 1 75	
Mechanic	do	1 75		Teamster	do	1 25	

REMARKS.—These works were established in 1878, though rates of wages are given only for the year 1880.

Payments are semi-monthly and in cash.

Two men work 12 hours a day, and the remainder 10 hours.

There have been no strikes, and the regularity of employment has been uninterrupted since 1878.

The only risk attending this branch of manufacture is the danger of explosions.

Below is a statement regarding selling prices, etc.:

Year.	Sporting powder, per pound.	Mining powder, per pound.	Percentage of wages to cost.
1880	\$0 24	\$0 12	Per cent. 12½

SUGAR-REFINING.

But one return was received in this industry. It gives wages, however, quite fully from 1866.

WAGES TABLE, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

George S. Hunt, Portland, Maine.

Classes of employées.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1870.	1875.	1874.	1873.	1872.	1871.	1870.	1860.	1868.	1867.	1866.
Foreman	Day.....	\$2 25	\$2 25	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$2 50	\$1 89½	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00	\$2 00
Clerk	do	3 00	3 00	3 00	2 30	2 30	2 30	1 02	3 20	1 02	2 19	2 19	2 19	2 19	1 02	1 02
Boiler	do	5 12	5 12	5 77	5 77	5 77	5 77	5 77	5 77	0 41	6 41	6 41	6 41	5 00	4 10½	4 10½
First engineer	do	3 26	3 26	3 26	3 26	3 26	3 46	3 46	3 46	3 46	3 46	3 46	3 46	3 46	3 00	2 75
Second engineer	do	2 25	2 75	2 50	2 50	2 50	2 50	2 50	2 75	2 75	2 75	2 50	2 50	2 50	2 33	.....
First fireman	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 75	2 00	2 00	2 00	2 00	2 00	2 00
Second fireman	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	.....	.....	.....	.....	.....	.....	.....	.....
Centrifugalman	do	1 06½	1 06½	1 06½	1 06½	1 75	1 85	1 85	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00
Packer	do	1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 83	1 83	1 83	1 83	1 83	1 83
Mixerman	do	1 02½	1 02½	1 75	1 75	1 75	1 00	1 00	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00
First cooper	do	2 70	2 70	3 00	3 00	3 00	3 25	3 25	3 25	3 25	3 00	3 00	3 00	3 00	3 00	3 00
Sirup-hogshead trimmer	do	2 00	2 00	2 25	2 25	2 50	2 75	2 75	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Sugar trimmer	do	1 75	1 75	2 00	2 00	2 00	2 00	2 25	2 25	2 25	2 25	2 25	2 50	2 50	2 25	2 25
Watchman	do	1 73	1 73	1 02	1 02	1 02	1 02	1 02	1 02	1 02	2 00	2 00	2 00	2 00	2 00	1 83
Laborer	do	1 25	1 35	1 50	1 50	1 50	1 50	1 02½	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50

REMARKS.—From 1866 to 1880 mixers, firemen, and centrifugalmen have made considerable over-time during from 3 to 4 months each year. This has not been included in the table, and would increase their wages about 25 per cent. each day for the extra time worked.

Since 1875 the above three classes have, when discharged during dull seasons, received a bonus of 50 cents per week, and have made on an average 25 weeks a season.

Coopers, who furnish their own tools at a trifling expense, are the only employes who are required to pay out any part of their wages for material, implements, etc. All-cash payments on the fifth day of every month is the rule.

The custom at this establishment is to run by seasons of from 6 to 8 months, when the mill is shut down, and all employes, except engineer, fireman, boiler, and clerk are discharged; these, with the exception of the last two named, being put on 8 hours' time.

There have been no strikes.

The selling prices of sugar and sirup have been as follows since 1870:

Year.	Sugar, per pound.	Sirup, per gallon.
1872.....	\$0 09½	\$0 18½
1873.....	8½¢	27½¢
1874.....	7½¢	23½¢
1875.....	7½¢	10½¢
1876.....	7½¢	24½¢
1877.....	8	18½¢
1878.....	4½¢	19½¢
1879.....	6	18½¢
1880.....	6	.....

In the last three years the sugar made has been of a lower grade. No change has been remarked in the efficiency of labor, and no labor-saving machinery has been introduced.

The trade is said to be healthful and to be free from danger of accidents.

TANNERIES.

Though this industry is a most important one, and is carried on in many sections of the country, there being in the census year no less than 3,105 tanneries in 37 of the states and territories, it was found very difficult to secure complete and satisfactory statements of wages.

This was due in part, no doubt, to the great changes that have occurred within the last five years in the methods and processes of tanning, and in the work carried on in such establishments, and partly to the fact that the subdivision of labor is by no means minute, and that the works are of so little importance that no records of wages have been kept. The tanneries of a few years ago employed but limited capital, worked under great disadvantages, and for their raw material depended upon the hides of the animals slaughtered in their immediate vicinity. Tanners had an instinctive dread of all improvements and innovations. Now there are large tan-yards of improved construction, gathering raw materials not only from their immediate vicinity, but from all sections of the country, and even from the cattle-raising parts of other nations. The chemistry of the trade has become the subject of inquiry and scientific research; the time occupied in the process has been materially shortened by the use of new tanning materials and new processes.

Notwithstanding the trouble experienced, however, in securing returns, some quite interesting statements are made.

Of 278 schedules sent out, 36 only were returned and 22 were tabulated. Those tabulated are divided by states as follows: California, 1; Kentucky, 2; Maine, 1; New York, 9; Ohio, 1; Pennsylvania, 5; Tennessee, 1; Virginia, 1; West Virginia, 1.

The tables give rates of wages in the manufacture of a number of kinds of leather, chief among which are various grades of sole, harness, and belting leather, with some calf, kip, glove, and buck. In addition to the schedules tabulated, two containing some facts of interest were received. The first of these, from McKay & Chisholm, of Benicia, California, manufacturers of sole, upper, and other forms of finished leather, gives the following average rates of wages for 1866, accompanied by a statement that these are the average rates for the succeeding 15 years:

Foreman	per month..	\$80 00
Bark-grinders	per day..	2 00
Beam-hands	do....	2 25
Rollers	do....	2 75
Curriers	do....	\$2 25 to 2 50
Shavers	do....	2 50
Finishers	do....	2 25
Strikers	do....	2 00
Handlermen	do....	2 00
Yard-hands	do....	2 00
Engineers	do....	2 75
Teamsters	do....	2 00
Watchmen	do....	1 75
Laborers	do....	2 00
Green hands	do....	1 00 to 1 75

This return also contains the following information regarding selling price, labor cost, and percentage of wages to cost.

Selling prices.

Year.	Harness leather, per pound.	Sole leather, per pound.	Buff leather, per square foot.
1866.....	\$0 26 to \$0 29	\$0 22 to \$0 25	.....
1870.....	26 to 31	22 to 25	\$0 17 to \$0 19
1875.....	26 to 33	19 to 20	13 to 18
1880.....	30 to 35	24 to 29	15 to 17

The fluctuation in the cost of hides and bark, and the difference in quality between the superior and inferior grades of leather produced, accounts for the margin between the lower and higher prices at which the leather was sold.

STATISTICS OF WAGES—TANNERIES.

Labor cost.

Year.	HARNESS LEATHER.		SOLE LEATHER.		BUFF LEATHER.	
	Per side.	Per pound.	Per side.	Per pound.	Per side.	Per foot.
1860.....	\$0 85	\$0 04½	\$0 40	\$0 02½	\$0 66	\$0 03½
1870.....	85	4½	40	2½	66	3½
1875.....	85	4½	40	2½	66	3½
1880.....	\$0 85 to 90	4½	.....	2½	.....	3½

The 85 to 90 cents per side cost of labor for harness is about 30 per cent. of the cost of manufacturing; the 40 cents per side cost of labor for sole leather is about 20 to 22 per cent. of the cost of manufacturing; the 66 cents per side cost of labor for buff is about 50 per cent. of the cost of manufacturing.

A return from the Sattillo and Shirley tanneries in Huntingdon County, Pennsylvania, gives rates of wages for five classes of employes from 1857, without specifying what the work done by each is. These are as follows:

1857-1860.	1860-1866.	1866-1880.
\$1 75	\$2 00	\$1 75
1 02½	1 75	1 02½
1 50	1 02½	1 50
1 25	1 25	1 25
1 00	1 00	1 12½
.....	.....	1 00

In addition to these wages, all men having families received free house, use of land for garden, the privilege of cutting wood free, and pasturage for a cow for each family. These are not included in the tables, and would increase wages about 10 per cent.

Extra earnings or deductions.—As a rule, the establishments reporting state that there are no opportunities for extra earnings. At a few works, however, such opportunities exist. Accompanying the first tabulation is a statement that Chinamen, who are employed to a large extent, have opportunities for extra earnings by working Sundays. As a rule, there are no allowances. One establishment, the one above referred to employing Chinamen, gives its white help who have worked continuously and satisfactorily during the year a bonus of about 25 cents a day. This is not included, however, in the wages rate, as it is understood to be a gratuity, and not a part of the wages. At a few works houses and gardens free, or at a reduced rent, are furnished to either a whole or a part of the workmen.

But one case is reported where tannery employes are obliged to furnish any part of their own tools.

Payments.—Payments are usually in cash. Many tanneries are small establishments, situated in the country; few men are employed, and generally it would not be profitable for the proprietor to keep a store from which to supply his workmen. There are a few cases, however, in which only part cash is paid, and in one case a change from all cash to part store-pay is noted.

As will be seen from the following table, the usual interval of payment at tanneries is monthly. As has already been stated, where works are situated in small places payments are not as frequent as in the large industrial centers.

Interval.	1820.	1875.	1870.	1865.	1860.	1855.	1850.	1845.	1840.	1835.	1830.
Weekly.....	11	10	9	7	5	3	2	1	.....	.....	.....
Monthly.....	9	9	8	6	3	2	1	.....	.....	.....	.....
On application..	2	2	2	3	2	2	2	1	1	1	1

Hours of labor.—The usual hours of labor at the tanneries reporting are 10. The following table gives these hours of labor for the years covered by the different schedules:

Year.	9 hours.	10 hours.	11 hours.	12 hours.
1830 .....	.....	.....	.....	1
1835 .....	.....	.....	.....	1
1840 .....	.....	.....	.....	1
1845 .....	.....	1	.....	.....
1850 .....	.....	1	.....	.....
1855 .....	.....	4	1	1
1860 .....	.....	7	1	.....
1865	1	9	2	.....
1870	1	15	1	.....
1875	2	16	2	.....
1880	4	16	2	.....

The generally expressed opinion is that 10 hours constitute a fair day's work, and that any reduction in the number of hours would result in partial demoralization of the laboring force and reduction of laboring quality.

Regularity of employment.—The establishments reporting have in most cases been operated the entire year, as will be seen by the following table :

Years.	12 months per year.	11 months, or less than 12 per year.	10 months, or less than 11 per year.	8 months per year.
1830.....	1	.....	.....	.....
1831 to 1835	1	.....	.....	.....
1836 to 1840	1	.....	.....	.....
1841 to 1845	1	.....	.....	.....
1846 to 1850	4	.....	.....	1
1851 to 1855	6	.....	1	1
1856 to 1860	8	.....	1	1
1861 to 1865	10	1	.....	1
1866 to 1870	15	.....	1	1
1871 to 1875	18	.....	.....	1
1876 to 1880	20	1	1	1
Year ending June 1, 1880..	20	1	.....	1

The chief cause of irregularity is over-production. Strikes are extremely rare.

Relation of wages and labor to selling price and cost.—There is such a difference in the grades and qualities of leather that even when schedules report upon the same kind, it is very difficult to arrive at any general statement under this head. The selling price of sole leather, for example, in Kentucky, and the labor cost is, as given, much greater than in either New York or Pennsylvania, the price being, in 1875, from 36 to 37½ cents per pound in Kentucky, and from 25 to 30 cents in New York and Pennsylvania, while the labor cost in Kentucky was 6 cents a pound, and in Ohio and Pennsylvania from 1¼ to 2¼ cents. The statements regarding percentage of wages to cost vary so much, being from 6 to 25 per cent. in the same year, that it is evident that the same things can not be included in every case under the term "wages and labor cost". It is possible that the great difference in the estimate of percentage of wages to cost may arise from certain tanneries including hides in cost while others do not.

One of the most interesting tabulations under this head is that of Hoffeld & Co., Lancaster, New York, giving the items of cost of manufacture of 1 pound of sole leather, exclusive of hides, from 1869 to 1881, which is as follows :

Year.	Bark.	Labor.	Incidental ex- penses.	Total cost.	Percent- age of la- bor to total cost.
1869.....	\$0 04½¢	\$0 02½¢	\$0 01½¢	\$0 08½¢	Per cent. 31.0
1870.....	5½¢	2½¢	1½¢	9½¢	26.8
1871.....	3½¢	2½¢	1½¢	7½¢	27.6
1872.....	3½¢	2½¢	1½¢	7½¢	30.6
1873.....	3½¢	2½¢	1½¢	6½¢	31.0
1874.....	4½¢	2½¢	1½¢	7½¢	27.4
1875.....	4½¢	2½¢	2½¢	9½¢	24.5
1876.....	4½¢	1½¢	1½¢	8½¢	23.5
1877.....	4½¢	2½¢	2½¢	9	44.3
1878.....	5½¢	1½¢	1½¢	8½¢	19.2
1879.....	4½¢	1½¢	1½¢	7½¢	25.0
1880.....	4½¢	1½¢	0½¢	7½¢	25.0
1881.....	4½¢	1½¢	0½¢	6½¢	25.4

Efficiency of labor and labor-saving machinery.—There has been but little change in the efficiency of labor in the years covered by the schedules. Some report an increase in efficiency and some a decrease.

As has already been stated, great improvements have been made in the past few years in tanneries, especially in the way of quickening the process. In connection with this quite a number of machines have been introduced for performing work that was formerly done by hand.

WAGES TABLES, WITH SUPPLEMENTARY AND EXPLANATORY REMARKS.

B. F. Sawyer & Co., Napa, California.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Foreman	Day ...	\$3 85	\$3 85	\$3 85	\$3 85	\$3 85	\$3 85	\$3 85	\$2 88	\$2 88	\$2 88	.....
Bark-grinder (Chinese)	do ...	1 15	1 15	1 15	1 15	1 00	1 00	1 00	1 00	.....	.....	.....
Beam-hand	do ...	1 75	1 75	1 75	1 75	1 65	1 65	1 65	1 65	.....	.....	.....
Shaver	do ...	1 75	1 70	1 70	1 70	1 50	1 50	1 50	1 50	.....	.....	.....
Finisher (kid)	do ...	2 25	2 12	2 12	2 12	2 12	2 30	2 30	2 30	2 30	2 30	.....
Handlerman	do ...	1 75	1 75	1 75	1 75	1 50	1 50	1 50	1 50	.....	.....	.....
Yard-hand (Chinese)	do ...	1 15	1 15	1 15	1 00	1 00	1 00	1 00	1 00	.....	.....	.....
Engineer	do ...	2 75	2 75	2 50	2 25	2 25	2 00	2 00	.....	.....	.....	.....
Watchman	do ...	2 50	2 50	2 50	2 25	2 25	.....	.....	.....	.....	.....	.....
Laborer	do ...	1 75	1 75	1 75	1 73	1 73	1 73	.....	.....	.....	.....	.....
Foreman (Chinese)	do ...	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	\$1 50
Laborer (Chinese) (a)	do ...	1 00- 1 15	1 00- 1 15	1 00- 1 15	1 00- 1 15	1 00- 1 15	1 00- 1 15	1 10- 1 25	1 10- 1 25	1 10- 1 25	1 10- 1 25	1 10- 1 25
Setter	do ...	2 00	1 02	1 02	1 02	1 02	2 12	2 12	2 12	2 12	2 12	2 12
Boy	do ...	1 00	06	06	1 00	1 00	.....	.....	.....	.....	.....	.....
Coloring boy	do ...	1 25	1 25	1 00	1 00	1 00	.....	.....	.....	.....	.....	.....

a This class embraces finishers and those having a considerable degree of skill.

REMARKS.—Chinese labor is largely employed at these works, and some very interesting facts regarding its characteristics are noted in the return.

The Chinamen have some opportunities for extra earnings by working on Sundays, for which they are paid 15 cents an hour. This has not been included in the table.

It is the practice at this tannery to give the white employes who have faithfully served the firm for one year at regular wages a bonus of 25 cents a day, or about \$75 a year. This has not been considered in the table, as it is regarded as a gratuity and not a part of the wages.

Employes are paid monthly and in gold coin.

The proprietors have always required 10 hours for a day's work, so varying the time of beginning and ceasing labor as to have the work done by daylight; and they are of the opinion that any change in the hours of labor would be a disadvantage.

The work has been carried on regularly 12 months a year, and strikes have been unknown.

It is remarked that the "glove sheep" skins referred to in the following table are used for gloves, and are blackened for button-stays and headings in ladies' shoes; the buck or tanned deer, with grain off or grain on, for gloves, and the russet sheep for shoe linings, are used in book-binding, etc.

Year.	SELLING PRICE.				LABOR COST.			PERCENTAGE OF WAGES TO COST.			
	Glove sheep, per dozen.	Russet sheep, per dozen.	Buck, per dozen.	Grained buck, per pound.	Glove sheep, per dozen.	Bark-tanned sheep.	Tanned deer, per dozen.	Glove sheep.	Russet sheep.	Buck.	Grained buck.
1875	\$7 00- 10 00	\$5 00- 6 00	\$14 00- 20 00	\$1 50	\$1 75	\$1 00	\$3 00	Per cent. 40	Per cent. 25	Per cent. 33	Per cent. 25
1880	7 00- 10 00	5 50- 6 50	16 00- 22 00	1 85	1 75	1 00	3 00	33	20	30	20

It is stated in regard to percentage of wages to cost that the above calculation has been based upon the cost of the best classes of stock, and may therefore be in some cases a little too low.

The proprietors have had some experience in the employment of European and Chinese labor side by side, and in their opinion the latter compare very favorably with the former in efficiency and habits, being industrious and peaceable and not addicted to the use of intoxicating liquors. It is further remarked that they are faithful in the performance of duty, not requiring to be watched, and are in every way equal to the whites except for some inferiority of physical strength and the disadvantage of knowing so little of the English language.

There has been no change in the efficiency of labor.

Machines for washing sheep pelts and for burring have been introduced, which save about 70 per cent. labor, and have decreased the number of employes about two-thirds. Machine breakers for softening leather or kid save about 50 per cent. in labor. These improvements have increased production without a proportionate increase of help.

There is nothing connected with this trade that is in any way prejudicial to health. But one serious accident has occurred in the history of the tannery, that being the loss of three fingers by a worker, who is, however, still employed by the company, and in a position where he can earn good wages.

STATISTICS OF WAGES—TANNERIES.

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Conrad, Fabel & Mooney, Louisville, Kentucky.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1870.	1878.	1877.	1876.	1875.	1874.
Foreman.....	Month..	\$80 00	\$80 00	\$80 00	\$80 00	\$80 00	\$80 00	\$80 00
Bark-grinder.....	Day....	1 25	1 25	1 33	1 50	1 50		
Beam-hand.....	do....	1 50	1 50	1 40	1 75	1 75		
Flesher.....	do....	2 00	1 75	2 00	2 00	2 00		
Liner.....	do....	1 33	1 25	1 50	1 60	1 50		
Roller.....	do....	3 00	3 00	3 25	3 50	3 50		
Striker.....	do....	1 50	1 30	1 50	1 50			
Yard-hand.....	do....	1 30	1 25	1 30	1 40	1 50		
Engineer.....	do....	1 60	1 50	1 50	1 60	1 60		
Teamster.....	do....	1 50	1 33	1 50	1 50	1 50		
Watchman.....	do....	1 50	1 50	1 50	1 50	1 50		
Laborer.....	do....	1 25	1 17	1 25	1 25	1 33		

REMARKS.—Sole and belting leather are produced at this tannery. Fleshers and strikers are the only classes who furnish their own tools. Their expense would deduct about \$6 and \$9 a year, respectively, from their wages, and has not been considered in the table. Payments are in cash every week.

The hours of labor were 10 a day until the census year, when, from November to March, they were shortened to 9.

No strikes have occurred, and employment has been uninterrupted since the establishment of the tannery.

The selling price of sole and belting leather and the cost of labor per pound were as follows for the years named:

Year.	SELLING PRICE.		LABOR COST PER POUND.	
	Sole leather, per pound.	Belt leather, per pound.	Sole leather.	Belting leather.
1870.....	\$0 40½	\$0 30	\$0 11	\$0 10
1875.....	37½	37	10	9
1880.....	35½	36	10	9

Trautwein, Hodapp & Co., Louisville, Kentucky.

Classes of employes.	Unit of payment.	DATES.						
		1880.	1870.	1878.	1877.	1876.	1875.	1874.
Foreman.....	Month..	\$83 00	\$83 00	\$75 00	\$75 00	\$80 00	\$80 00	\$80 00
Beam-hand.....	Day....	2 20	2 00	1 75	1 75	2 00	2 00	2 25
Roller.....	do....	2 50	2 25	2 00	2 00	2 00	2 25	2 25
Striker.....	do....	1 60	1 00	1 50	1 50	1 60	1 60	1 60
Handlerman.....	do....	1 50	1 50	1 40	1 40	1 50	1 50	1 50
Yard-hand.....	do....	1 40	1 40	1 25	1 25	1 30	1 40	1 40
Engineer.....	do....	2 00	1 75	1 75	1 75	2 00	2 00	2 00
Teamster.....	do....	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Watchman.....	do....	1 60	1 50	1 40	1 40	1 50	1 50	1 50
Laborer.....	do....	1 25	1 25	1 10	1 10	1 25	1 25	1 25

REMARKS.—Sole leather and belting are produced at this establishment.

Payments are all cash and weekly.

Ten hours constitute a day's labor.

Employment has been regular 12 months in the year since the establishment of the business, except from 1877 to 1878, when for about 3 months but three-fourths' time was made, and from 1878 to 1879, when the tannery was idle 3 months, the cause of irregularity being over-production. There have been no strikes or lockouts.

The selling price per pound of oak sole leather was 36 cents in 1875 and 35 cents in 1880; the labor cost was 6 cents for the former year and 5½ for the latter.

The following statement gives the proportions of the various items of cost:

Bark.....	16½
Labor.....	16½
Raw material.....	66½

No labor-saving machinery has been introduced.

STATISTICS OF WAGES—TANNERIES.

Casco Tanning Company, Portland, Maine.

Classes of employes.	Unit of payment.	DATES.												
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Beam-hand.....	Day....	\$1 33½	\$1 25	\$1 10½	\$1 33½	\$1 50	.....	\$1 50	\$1 00½	\$1 00½	.....	\$1 00½	.....	.....
Carrier.....	do....	1 00½	1 00½	1 00½	1 50	1 00½	.....	1 00½	1 83½	1 83½	.....	1 83½	.....	.....
Yard-hand.....	do....	1 25	1 10½	1 00	1 25	1 33½	.....	1 33½	1 50	1 50	.....	1 50	.....	.....

Classes of employes.	Unit of payment.	DATES.												
		1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.
Beam-hand.....	Day....	.....	\$1 00½	.....	\$1 50	\$1 33½	.....	.....	.....	.....	.....	.....	.....	\$1 10½
Carrier.....	do....	.....	1 00½	.....	1 00½	1 50	.....	.....	.....	.....	.....	.....	.....	1 33½
Yard-hand.....	do....	.....	1 50	.....	1 33½	1 10½	.....	.....	.....	.....	.....	.....	.....	1 00

REMARKS.—Wax, belt, and crop leather are the products of this tannery.

The rates given above include the extra earnings which employes can make by working over-time and holidays.

Payments have been weekly and all in cash since 1855.

The hours of labor are uniformly 10 a day.

There have been no strikes, and the tannery has always run full time, 12 months in the year, since 1855, except in 1877, when, owing to a dull market, but two-thirds time was made.

The variation in selling prices of several of the articles produced is given in following table:

Year.	Crop leather, per pound.	Bolt leather, per pound.	Wax leather, per foot.
1855.....	\$0 25	\$0 33	\$0 18
1860.....	35	38	18
1865.....	60	50	24
1870.....	42	47	29
1875.....	34	34	23-25
1880.....	33-35	40	18-21

James B. Weed & Co., Binghamton, New York.

(Continued on next page.)

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman	Day	\$4 32	\$4 35	\$4 42	\$4 84	\$5 00	\$5 00	\$5 00								
Beam-hand	do	1 80	1 32	1 30	1 38	1 38	1 08	1 05	\$1 05	\$1 05	\$1 05	\$1 05	\$1 05	\$1 05	\$1 75	\$1 75
Carrier	do	2 48	2 38	2 32	2 10	2 77	2 05	2 50½	2 50	2 50	2 50	2 50	2 00	2 00	2 00	2 00
Shaver	do	2 48	2 38½	2 32	2 10½	2 77	2 05½	2 50½	2 50	2 50	2 50	2 50	2 00	2 00	2 00	2 00
Finisher	do	1 45	1 48	1 47	1 48	1 50	1 73	1 77	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Striker	do	1 45	1 48	1 47	1 48	1 50	1 73	1 77	1 75	1 75	1 35	1 75	1 75	1 75	1 75	1 75
Handlerman	do	1 31	1 27	1 32	1 24	1 30	1 40	1 50	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Yard-hand	do	1 31	1 27	1 32	1 24	1 30	1 40	1 50	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Engineer	do		2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50				
Watchman	do		1 00	1 00	1 00	1 15	1 80	1 54	1 50	1 50	1 50	1 50				
Teamster	do		1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 02½	1 25	1 25	1 25	1 25
Laborer	do	1 35	1 35	1 40	1 47	1 52	1 70	1 75								

Classes of employes.	Unit of payment.	DATES.															
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Foreman	Day																
Beam-hand	do	\$1 05	\$1 50	\$1 25	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	\$1 25	\$1 15	\$1 10	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00
Carrier	do	2 00	2 00	2 40	2 20	2 00	1 70	1 75	1 75	1 75	1 75	1 05	1 50	1 50	1 50	1 50	1 50
Shaver	do	2 00	2 00	2 40	2 20	2 00	1 70	1 75	1 75	1 75	1 75	1 05	1 50	1 50	1 50	1 50	1 50
Finisher	do	1 75	2 00	1 75	1 00	1 50	1 25	1 25	1 30	1 00	1 00	1 50	1 25	1 25	1 25	1 25	1 25
Striker	do	1 75	2 00	1 75	1 00	1 50	1 25	1 25	1 30	1 00	1 00	1 50	1 25	1 25	1 25	1 25	1 25
Handlerman	do	1 00	1 00	1 50	1 12	1 00	1 00	1 00	1 00	1 20	1 10	1 00	1 00	1 00	1 00	1 00	1 00
Yard-hand	do	1 00	1 00	1 50	1 12	1 00	1 00	1 00	1 00	1 20	1 10	1 00	1 00	1 00	1 00	1 50	1 00
Engineer	do																
Watchman	do																
Teamster	do	1 25	1 30	1 12	1 00	88	88	88	1 00	1 00	87	87	75	75	75	75	75
Laborer	do																

REMARKS.—Finished upper leather is produced.

Payments were made on application from 1845 to 1860, since which time they have been monthly. All cash is the rule.

The systemization of work has increased the efficiency of labor. The labor-saving machinery introduced within the last 10 or 15 years has increased the output per man from 15 to 18 per cent.

STATISTICS OF WAGES—TANNERIES.

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James B. Weed & Co., Binghamton, New York—Continued.

The hours of labor were 12 a day from 1850 to 1880, and 10 from 1860 to 1880.

From 1851 to 1860 the works ran on an average 10 months a year; from 1861 to 1865, full time; from 1866 to 1870, 10 months; 1871 to 1875, 11 months; and since 1876 nearly full time.

The cause of irregularity was light demand for products, but the proprietors endeavor to keep men at work irrespective of the market.

There has been little difficulty from strikes.

The side of leather is split into two or three pieces; the grain or hair side is sold per square foot and the split side per pound.

Year.	SELLING PRICE.		Labor cost of finished leather, per side.	Percentage of wages to cost of finished leather, per side.
	Grain leather, per square foot.	Split leather, per pound.		
1870.....	\$0 19 $\frac{1}{2}$	\$0 38		<i>Per cent.</i>
1875.....	18 $\frac{1}{2}$	36 $\frac{1}{2}$	\$0 99	22
1880.....	15 $\frac{1}{2}$	28	73 $\frac{1}{2}$	18

An establishment in the state of New York.

Classes of employes.	Unit of payment.	DATES.															
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.
Foreman	Month..	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$
Laborer	Day.....	90- 1 35	90- 1 35	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 75	1 00- 1 75	1 00- 1 75	1 00- 1 75	1 00- 1 75

Classes of employes.	Unit of payment.	DATES.															
		1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.	1849.
Foreman	Month..	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	\$83 33 $\frac{1}{2}$ 100 00 $\frac{1}{2}$	.....
Laborer	Day....	1 00- 1 75	1 00- 1 75	1 00- 1 75	1 00- 1 75	1 00- 1 75	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	1 00- 1 50	.....

REMARKS.—Sole leather made only from hides from Central and South America, and Texas, Mexico, and California, is produced at the tanneries of this firm, of which three are operated.

The rates in the above tabulation placed against laborers are for the common laborers or workmen, and those against foreman the amounts paid at their several tanneries. In addition to this, work, such as rolling, sweating, beam-work, etc., is done by the piece, those in charge of the work employing their own men, paying them from their earnings, and clearing for themselves from \$2 to \$5 per day.

Employes make some over-time, for which they are paid at regular rates. The company furnishes houses and gardens to those who wish them at about half the common rents.

Wages are in cash, and were paid on application prior to 1846, and since that time monthly. The foreman has always been paid on application.

The hours of labor per day were 12 from 1830 to 1845, 10 from 1845 to 1879, and 9 in the census year.

The shortening of the hours in 1879-'80 was for the purpose of furnishing employment to a larger number of laborers, of which there was a surplus. Some piece-hands work an average of only 8 hours, but must be on hand when such work is required.

At this tannery the men are paid by the hour and not by the day. The change of payment from by the day to by the hour was the result of legislation declaring 8 hours a day's work. The result of this change, it is stated, is to the disadvantage of the workmen. When the men were paid by the day, having come to the tannery they remained during the day, whether there was any thing to do or not, if they had begun the day's work. Now, when work stops pay stops, the men receiving compensation only for the time they are actually employed. The proprietors state that they consider 10 hours the proper measure of a day's work, taking into account only the laborer himself, and considering the matter only in its physical, moral, financial, and general results to the laborer.

The tannery was operated uninterruptedly from 1830 to 1875, from which date to the close of the census year 10 $\frac{1}{2}$ months were the average per year, the cause of stoppages being over-production.

The business has been exempt from labor disputes. This the proprietors ascribe to the fact that they have always paid full wages, advancing and declining as the trade warranted.

The labor cost to a pound of leather has varied as follows since 1830:

1830.....	\$0 03	1860.....	\$0 02 $\frac{1}{2}$
1835.....	3	1865.....	2 $\frac{1}{2}$
1840.....	3	1870.....	2
1845.....	3	1875.....	1 $\frac{3}{4}$
1850.....	2 $\frac{1}{2}$	1880.....	1 $\frac{1}{2}$
1855.....	2 $\frac{1}{2}$		

The following statement of the exact cost of production in 1849, at one of the tanneries belonging to this company, is given:

Bark.....	\$0 02 $\frac{1}{2}$
Labor.....	1 $\frac{1}{2}$
Freight.....	$\frac{1}{100}$
Interest.....	$\frac{1}{100}$
Expense.....	$\frac{1}{100}$
Sundries.....	$\frac{1}{100}$
	5 $\frac{1}{100}$

Estimating the average cost of leather at 25 cents a pound for the years from 1830 to 1880, labor has averaged in the neighborhood of 10 per cent. of total cost during the period covered by the report.

There has been an increase in the efficiency of labor. Of late years the work has been divided into departments, and the men, by being constantly engaged in one line of employment, have gained peculiar skill in that branch.

New machinery has been introduced and improvements have been made in that already in use.

The proprietors regard tanning as a healthful business, and remark that there have been but two or three deaths from disease and as many from accidents within their recollection.

STATISTICS OF WAGES—TANNERIES.

R. Hoffield & Co., Lancaster, New York.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman (beam-house).....	Day		\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 75	\$1 75	\$1 75	\$1 75	\$1 75				
Mark-grinder	do												\$1 25	\$1 25	\$1 25	\$1 50
Beam-hand	do		1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 75
Roller	do		1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 75
Striker	do															
Handlerman	do												1 50	1 50	1 50	1 62½
Yard-hand	do												1 25	1 25	1 25	1 50
Engineer	do		1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 75	1 50	1 50	1 50	1 75
Teamster	do												1 50	1 50	1 50	1 75
Watchman	do												1 50	1 50	1 50	1 75
Laborer	do		1 00	1 00	1 00	1 00	1 00	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50

Classes of employes.	Unit of payment.	DATES.																
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.	
Foreman (beam-house).....	Month.....	.....	\$65 00	.....	\$75 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00
Bark-grinder	Day	\$1 50	1 37½	\$1 37½	1 25	75	75	75	75	75	75	75	75	75	75	75	75	
Beam-hand	do	1 75	1 62½	1 62½	1 50	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	
Roller	do	1 75	1 62½	1 62½	1 50	81	81	81	81	81	81	81	81	81	81	81	81	
Striker	do .....	.....	.....	.....	.....	75	75	75	75	75	75	75	75	75	75	75	75
Handlerman	do	1 62½	1 50	1 50	1 37	81	81	81	81	81	81	81	81	81	81	81	81	
Yard-hand	do	1 50	1 37½	1 37½	1 25	81	81	81	81	81	81	81	81	81	81	81	81	
Engineer	do	1 75	1 62½	1 62½	1 50	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	
Teamster	do	1 75	1 62½	1 62½	1 50	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	
Watchman	do	1 75	1 62½	1 62½	1 50	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	87½	
Laborer	do	1 50	1 37½	1 37½	1 25	75	75	75	75	75	75	75	75	75	75	75	75	

REMARKS.—These works have been in operation since 1850, and tan sole leather with hemlock.

During the time of getting in bark, in July, August, and September, over-time is required, for which the regular rate is paid. These extra earnings have not been included in the above table.

Employes are paid wholly in cash every week.

A day's work consisted of 11 hours up to 1865, since which time 10 hours has been the rule.

The tannery has always run full time, and there have been no labor disputes.

The following table gives the selling prices, labor cost, and percentage of wages to cost of sole leather:

Year.	SELLING PRICE.		Labor cost, per pound.	Percentage of wages to cost.
	Best slaughter, per pound.	Best dry hide, per pound.		
1860	\$0 22	\$0 20		
1865	40	36		
1870	35	32	\$0 02, 75%	26.8
1875	30	28	2, 75%	24.6
1880	30	28	1, 75%	25.0

In 1880 it is stated that No. 2 slaughter sole leather sold for 28 cents a pound, and No. 3 for 25 cents; No. 2 dry hide for 26 cents, and No. 3 for 24 cents.

There has been no change in the efficiency of labor at this establishment.

The wash- or rinse-wheel and the bate-wheel have been introduced, but the saving in labor effected by them has not been very great.

The employer remarks that though the trade is not generally considered very healthful, he has observed but little sickness among his men.

The following very interesting statement of cost of sole leather, per pound, for each year since 1869 is given:

Year.	Bark.	Labor.*	Expense, incidental.	Total.
1869.....	\$0 04, 75%	\$0 02, 75%	\$0 01, 75%	\$0 08, 75%
1870.....	5, 75%	2, 75%	1, 75%	9, 75%
1871.....	3, 75%	2, 75%	1, 75%	7, 75%
1872.....	3, 75%	2, 75%	1, 75%	7, 75%
1873.....	3, 75%	2, 75%	1, 75%	6, 75%
1874.....	4, 75%	2, 75%	1, 75%	7, 75%
1875.....	4, 75%	2, 75%	2, 75%	9, 75%
1876.....	4, 75%	1, 75%	1, 75%	6, 75%
1877.....	4, 75%	2, 75%	2, 75%	9
1878.....	5, 75%	1, 75%	1, 75%	8, 75%
1879.....	4, 75%	1, 75%	1, 75%	7, 75%
1880.....	4, 75%	1, 75%	0, 75%	7, 75%

The cost of bark, per cord of 128 cubic feet, is given as follows:

1861.....	\$3 50
1862.....	4 00
1863.....	6 60
1864.....	8 00
1865.....	8 00
1866.....	6 50
1867.....	7 00
1868.....	7 50
1869.....	7 50
1870.....	8 00
1871.....	8 00
1872.....	7 00
1873.....	6 50
1874.....	7 00
1875.....	7 50
1876.....	7 50
1877.....	7 00
1878.....	7 00
1879.....	6 00
1880.....	6 50

STATISTICS OF WAGES—TANNERIES.

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W. H. Sherwood, Maine, New York.

Classes of employ6s.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman	Day	\$1 00½	\$1 60½	\$1 00½	\$1 00½	\$1 00½	\$1 00½	\$1 00½	\$1 00½	\$3 20	\$3 20	\$3 20	\$3 20	\$3 20	\$3 20	\$3 20
Workman	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 15½	1 15½	1 15½	1 34½	1 34½	1 53½	1 53½

REMARKS.—Hemlock sole leather is made at this tannery.

Married men are furnished with free houses and land for garden. This is considered as equivalent to about \$2 per month, and would increase the earnings given in the above table.

Payments are monthly in cash.

From 1866 to 1870 the men worked from sunrise to sunset, but since that time 11 hours in summer and 9 in winter have been counted a day's work, and the men perform as much labor in these shortened hours as they did in the long days formerly the rule.

The works run 12 months a year.

No strikes have occurred.

The total cost, including labor, bark, interest, etc., but not including hide, for each pound of leather is 6 cents.

In the following table are given the selling price, labor cost, and percentage of wages to cost of sole leather:

Year.	Selling price, per pound.	Labor cost, per pound.	Percentage of wages to cost.
1866.....	\$0 32	\$0 02	10
1870.....	32	2	10
1875.....	28	1½	8
1880.....	24	1½	8

No change has been noted in the efficiency of labor.

Endless chains for conveying spent tan to the furnace does away with one employe.

The trade is healthful and is not dangerous.

George Berry, Oneida, New York.

Classes of employes.	Unit of payment.	DATES.											
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.
Foreman	Month..	\$35 00	\$35 00	\$40 00	\$45 00	\$45 00	\$54 00	\$54 00	\$53 00	\$50 00	\$50 00	\$52 00	\$50 00
Bark-grinder	Day	1 15	1 15	1 34½	1 34½	1 34½	1 54	1 54	1 54	1 38½	1 38½	1 34½	1 42½
Beam-hand	do	1 15	1 00	1 15	1 15	1 34½	1 40	1 46	1 40	1 54	1 54	1 54	1 34½
Yard-hand	do	1 15	1 15	1 34½	1 15	1 15	1 40	1 40	1 40	1 38½	1 38½	1 40	1 15
Engineer	do	1 15	1 15	1 34½	1 34½	1 34½	1 54	1 54	1 40	1 38½	1 38½	1 54	1 34½
Laborer	do	1 00	1 15	1 15	1 15	1 15	1 40	1 40	1 40	1 15	1 15	1 34½	1 34½

Classes of employes.	Unit of payment.	DATES.											
		1868.	1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.
Foreman	Month..	\$50 00	\$45 00	\$45 00	\$42 00	\$45 00	\$45 00	\$40 00	\$40 00	\$40 00	\$42 00	\$42 00	\$42 00
Bark-grinder	Day	1 34½	1 34½	1 34½	1 15	1 15	1 15	02½	02½	02½	1 00	1 00	1 00
Beam-hand	do	1 34½	1 34½	1 34½	1 23	1 34½	1 34½	1 15	1 15	1 15	1 34½	1 34½	1 34½
Yard-hand	do	1 15	1 15	1 15	1 15	1 15	1 15	02½	02½	02½	1 15	1 15	1 15
Engineer	do	1 34½	1 34½	1 34½	1 23	1 34½	1 34½	1 15	1 15	1 15	1 34½	1 34½	1 34½
Laborer	do	1 15	1 15	1 15	1 15	1 15	1 15	02½	02½	02½	1 00	1 00	1 00

REMARKS.—Calfskins are tanned at this establishment.

Employes receive their earnings in cash on the first of each month.

Ten hours has always been the rule for a day's labor.

The tannery has made full time every year since its establishment, and no strikes or lockouts have occurred.

The statement is made that there has been a decrease in the efficiency of labor.

The trade is not considered dangerous or unhealthful.

The selling prices and labor cost of rough calfskin, the product of this tannery, are given below. The average percentage of wages to cost, from 1857 to 1880, is given as 12½ per cent.:

Year.	Selling price, per pound.	Labor cost, per pound.
1857.....	\$0 00	\$0 06
1860.....	40	7
1865.....	60	9
1870.....	52	8
1875.....	52	8
1880.....	52	8

STATISTICS OF WAGES—TANNERIES.

Gideon Wales, Pike Pond, New York.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman.....	Month..	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$75 00	\$50 00	\$55 00	\$50 00	\$50 00	\$45 00	\$45 00	\$45 00	\$45 00
Bark-grinder.....	Day.....								1 15			1 15				
Beam-hand.....	do.....	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00				
Roller.....	do.....						1 15		1 40			1 40				
Handlerman.....	do.....						1 00		1 15			1 15				
Yard-hand.....	do.....						1 00					1 15				
Teamster.....	do.....						1 15		1 15			1 15				
Watchman.....	do.....						1 00		1 15			1 15				
Laborer.....	do.....	1 00	1 00	1 00	1 00	1 00	1 15	1 15	1 15	1 15	1 15	1 15	1 15	1 15	1 15	1 15

Classes of employes.	Unit of payment.	DATES.															
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Foreman	Month..	\$45 00	\$40 00	\$25 00	\$25 00	\$25 00	.....	.....	.....	.....	.....	\$40 00	\$40 00	\$30 00	.....	.....	\$20 00
Bark-grinder	Day .....	.....	1 00	.....	60	.....	\$0 60	.....	.....	.....	.....	65 ¹ / ₂	.....	.....	.....	.....	61 ¹ / ₂
Beam-hand	do	1 15	1 00	.....	77	.....	77	\$0 84 ¹ / ₂	.....	\$0 84 ¹ / ₂	.....	70 ¹ / ₂	.....	.....	.....	.....	60 ¹ / ₂
Roller	do	1 15	1 00	.....	90	.....	85	84 ¹ / ₂	.....	84 ¹ / ₂	.....	70 ¹ / ₂	.....	.....	.....	.....	70 ¹ / ₂
Handlerman	do	1 15	1 00	.....	77	.....	73	.....	.....	.....	.....	60 ¹ / ₂	.....	.....	.....	.....	61 ¹ / ₂
Yard-hand	do	1 15	1 00	.....	77	.....	69	70 ¹ / ₂	.....	.....	.....	60 ¹ / ₂	.....	.....	.....	.....	61 ¹ / ₂
Teamster	do	1 15	1 00	.....	77	.....	73	73 ¹ / ₂	.....	.....	\$0 73 ¹ / ₂	60 ¹ / ₂	.....	.....	.....	.....	61 ¹ / ₂
Watchman	do	1 15	1 00	.....	.....	.....	65	.....	.....	.....	.....	76 ¹ / ₂	.....	.....	.....	.....	70 ¹ / ₂
Laborer	do	1 15	1 00	60	69	60	.....	69 ¹ / ₂	.....	.....	.....	69 ¹ / ₂	.....	.....	.....	.....	61 ¹ / ₂

REMARKS.—Hemlock sole leather is produced at this tannery. Employes have free houses and gardens. This would increase wages about 5 per cent., and has not been included in the tables. Payments are monthly, half in cash and half in store-orders. From 1850 to 1865 the employes worked from sunrise to sunset; since 1865 the hours of labor per day have been 11.

The tannery has been run on an average but 8 months a year, the employer stating that the works can not be operated in hot weather. A scrubbing machine for cleaning leather as it comes from the tan-yard has been introduced, the effect of which has been a reduction of 50 per cent. in the cost of labor.

The trade is healthful and free from danger of accident.

A. Devereux & Son, Sanford, New York.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.														
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman.....	Day.....	(a)	(a)	(a)	\$3 20	\$3 20	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$3 84	\$2 88	\$2 88	\$2 72	\$2 72
Bark-grinder.....	do.....												1 10	1 10	1 00	1 00
Beam-hand.....	do.....	\$0 04½	\$0 04	\$0 04	b4	b5	b5	1 26	1 35	1 35	b5½	b5¼	b5	b5	b5	b5
Roller.....	do.....	1 80	1 25	1 25	1 25	1 25	1 25	1 25	1 40	1 40	1 40	1 40	1 40	1 40	1 40	1 40
Carrier.....	do.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 10
Handlerman.....	do.....	1 10	1 10	1 10	1 10	1 10	1 20	1 20	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Yard-hand.....	do.....	1 10	1 10	1 10	1 10	1 10	1 20	1 20	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25
Engineer.....	do.....	1 26	1 23	1 26	1 35	1 40	1 50	1 50	1 54	1 54	1 54	1 54	1 69	1 62	1 57	1 57
Teamster.....	do.....	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	95	95
Watchman.....	do.....	1 00	1 00	1 00	1 00	1 25	1 30	1 30	1 40	1 40	1 50	1 50	1 50	1 50	1 50	1 75
Laborer.....	do.....	02	88	02	96	1 15	1 26	1 26	1 30	1 30	1 30	1 35	1 30	1 35	1 26	1 35

Classes of employes.	Unit of payment.	DATES.															
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.	1850.
Foreman	Day	\$2 40	\$2 40	\$2 40	\$2 24	\$2 24	\$2 24	\$2 24	\$2 24	\$2 24	\$2 24	\$2 24	\$2 24	\$2 24	\$2 24	\$2 24	\$1 60
Bark-grinder	do	1 00	1 00	1 00	80	75	75	75	75	75	72	72	72	72	72	72	72
Beam-hand	do	1 35	1 26	1 15	80	80	77	77	77	77	77	77	73	73	73	73	73
Roller	do	1 40	1 25	1 10	95	90	88	88	88	88	88	88	85	85	85	85	85
Carrier	do	1 00	1 00	95	75	72	72	72	72	72	72	72	70	70	70	70	70
Handlerman	do	1 35	1 00	1 00	76	76	76	76	76	76	76	76	75	75	75	75	75
Yard-hand	do	1 25	1 00	1 00	76	76	76	76	76	76	76	76	75	75	75	75	75
Engineer	do	1 54	1 42	1 35	1 08	1 00	1 00	1 08	1 04	1 04	1 00	1 00	1 00	96	92	92	92
Teamster	do	95	85	75	75	70	70	75	75	75	75	75	70	70	70	70	70
Watchman	do	1 50	1 25	1 25	1 00	90	90	90	90	90	90	80	80	80	80	80	80
Laborer	do	1 20	1 23	1 15	77	73	73	73	73	73	73	69	69	69	69	69	69

a Interest in business.

b Were paid per side from 1866 to 1871, inclusive, and again from 1875 to 1880.

A. Devereux & Son, Sanford, New York—Continued.

REMARKS.—Sole leather exclusively is produced at this tannery.

The men frequently have occasion to work in the evening and through the night. The extra earnings for such over-time would increase wages about 5 per cent., and have not been included in the table.

Houses and gardens are provided free of charge, and would add about \$3 per week to wages.

Previous to 1870 employes were paid on application, with yearly settlements April 1; but for the last 10 years they have been paid at the end of each month. Sixty per cent. of wages is in cash, and the balance in store-orders. The firm formerly owned a store in connection with these works, but gave it up in 1865.

From 1850 to 1865 employes worked from "sun to sun", but the hours of labor have since been 8½ in the short days and 11½ in long days, averaging 10 hours a day the year round.

The tannery has been in constant operation since 1861, when three months were lost.

No strikes have taken place

The following statement is made regarding selling prices and labor cost of sole leather:

Year.	Selling prices, per pound.	Labor cost, per pound.
1850.....	\$0 13	\$0 01½
1855.....	25	1½
1860.....	23	1½
1865.....	30	2½
1870.....	26	1½
1875.....	20	1½
1880.....	22	1½

There has been no material increase in the efficiency of labor.

A machine for scrubbing leather has been introduced, and also a tan-burning furnace for generating steam. The former improvement saves the labor of one man, and the latter probably of three others formerly employed in cutting and preparing wood.

The verdict here, as elsewhere, is that the trade is healthful.

E. B. Weatherbee, Warren, New York.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman.....	Month..	\$48 75	\$45 50	\$45 50	\$52 00	\$52 00	\$52 00	\$52 00	\$52 00	\$52 00	\$52 00					
Beam-hand.....	Day.....	1 37½	1 25	1 25	1 50	1 25	1 35	1 00	1 00	1 00	1 50					
Handlerman.....	do.....	1 05	1 05	1 05	1 53	1 53	1 70	1 70	1 70	1 70	1 70					
Yard-hand.....	do.....	1 00	88	88	1 25	1 25	1 25	1 25	1 25	1 42						
Teamster.....	do.....	98½	69½	70½	95½		1 28½	1 28½	1 28½	1 15½	1 15½					
Laborer.....	do.....	1 00	1 00	1 00		1 50	1 50	1 50								

Classes of employes.	Unit of payment.	DATES.														
		1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.	1854.	1853.	1852.	1851.
Foreman.....	Month..			\$35 00	\$35 00	\$35 00	\$34 00	\$34 00	\$34 00	\$34 00	\$30 00	\$27 00	\$21 00	\$21 00	\$20 00	\$21 00
Beam-hand.....	Day.....			1 10	1 10	1 10	1 10	1 10	1 10	1 10	1 00	1 00	77	77	70	90
Handlerman.....	do.....			1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	77	75	90	70	70
Yard-hand.....	do.....			50	50	50	50	1 00	00	00	00	50	75	50	50	00
Teamster.....	do.....			92½	92½	92½	92½									
Laborer.....	do.....							00								

REMARKS.—Rough calf skins and rough upper leather are produced.

The above rates include all allowances.

Cash payments are made on application.

All classes average 10 hours a day, working 9 hours in winter, 11 in summer, and 10 in the fall and spring.

Employment has been uniformly 12 months a year. There have been no strikes or lockouts.

There has been but little change in the efficiency of labor.

A wheel for beating skins has been put in, regarding which the proprietor remarks: "This enables us to work in 600 skins per week with two men on the beam, whereas we only worked 450 before. The saving in the cost of working is 1½ cent per skin."

Prices of product are given for every fifth year since 1850, except for 1865; labor cost and percentage of wages to cost from 1870 only. These are as follows:

Year.	SELLING PRICE.		LABOR COST.		PERCENTAGE OF WAGES TO COST.	
	Rough calf-skins, per pound.	Rough leather, per pound.	Rough calf-skins, per pound.	Rough leather, per pound.	Rough calf-skins.	Rough leather.
1850.....	\$0 50	\$0 28			Per cent.	Per cent.
1855.....	50	28				
1860.....	50	28				
1865.....						
1870.....	70	32	\$0 03	\$0 02½	5½	10½
1875.....	45	22	4½	3	9	13½
1880.....	60	27	2½	2½	5½	10

The trade is regarded as healthful.

STATISTICS OF WAGES—TANNERIES.

Aaron R. Hill, Wellsville, New York.

Classes of employes.	Unit of payment.	DATES.												
		1860.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Foreman.....	Month..	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$100 00	\$75 00	\$75 00	\$75 00
Bark-grinder	Day	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Beam-hand	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Roller	do	1 50	1 50	1 50	1 50	1 50	1 50	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Handlerman	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Yard-hand	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Engineer	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 25	1 25	1 50	1 50	1 50
Teamster	do	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 25	1 25	1 25	1 50	1 50	1 50
Watchman.....	do	1 50	1 50	1 50	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50
Laborer.....	do	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 00	1 00	1 00	1 50	1 50

Classes of employes.	Unit of payment.	DATES.												
		1867.	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	1857.	1856.	1855.
Foreman.....	Month..	\$100 00	\$100 00	\$100 00	\$75 00	\$75 00	\$75 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	\$50 00	.....
Bark-grinder	Day	1 50	1 50	1 25	1 25	1 00	1 00	75	75	75	75	75	75	.....
Beam-hand	do	1 50	1 50	1 25	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	.....
Roller	do	1 50	1 50	1 25	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	.....
Handlerman	do	1 50	1 50	1 25	1 25	1 00	75	75	75	75	75	75	75	.....
Yard-hand	do	1 50	1 50	1 25	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	.....
Engineer	do	1 50	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	.....
Teamster	do	1 50	1 50	1 50	1 25	1 25	1 00	1 00	1 00	1 00	1 00	1 00	1 00	.....
Watchman	do	1 50	1 50	1 50	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	1 25	.....
Laborer	do	1 50	1 50	1 50	1 25	1 25	1 00	75	75	75	75	75	75	.....

REMARKS.—Hemlock sole leather is produced.

The employes of the above tannery have the benefit of houses and gardens free of rent. This, however, would but slightly increase the wages given in the table.

Payments were weekly from 1860 to 1875, since which time they have been monthly. From 1856 to 1877 the firm paid all cash, but in 1877 the present method of paying half cash and half store-orders was adopted.

The hours of labor are 10, and the works are never idle. There have been no strikes or lockouts.

The selling prices of hemlock sole leather have been as follows: In 1860, 30 cents; 1865, 40 cents; 1870, 30 cents; 1875, 28 cents; 1880, 25 cents. The labor cost is stated to have averaged about 3 cents a pound for the time covered, and 15 per cent. of the entire cost.

No increase is noticed in the efficiency of labor, and the only mechanical improvement mentioned in the schedule is the introduction of a machine for washing leather, which has effected a slight saving of labor.

The trade is not regarded as dangerous or unhealthful.

Lang & Wanner, Cincinnati, Ohio.

[Continued on next page.]

Classes of employes.	Unit of payment.	DATES.												
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.
Bark-grinder	Day	\$1 50	\$1 50	\$1 50	\$1 50	\$1 00	\$1 00	\$1 00	\$1 75	\$1 75	\$1 00	\$1 00	\$1 00	\$1 83
Beam-hand	do	1 70	1 83½	1 85	1 80	1 80	2 00	2 00	2 08	2 08	2 08	2 08	2 08	2 08
Roller	do	2 37	2 42	2 50	2 50	2 58	2 00	2 00	2 00	2 00	2 50	2 50	2 50	2 50
Currier	do	2 10½	2 21	2 25	2 20	2 33½	2 50	2 50	2 50	2 50	2 50	2 50	2 00	2 50
Shaver	do	2 25	2 25	2 25	2 27	2 20	2 00	2 00	3 00	3 00	3 00	2 00	2 00	2 00
Finisher	do	2 16	2 16	2 33	2 33	2 25	2 25	2 25	2 33	2 33	2 33	2 33	2 33	2 25
Handlorman	do	2 00	2 00	2 00	2 00	2 00	2 00	2 08	2 16	2 10	2 16	2 50	2 50	2 00
Yard-hand	do	1 58	1 00	1 01	1 02	1 04	1 75	1 75	1 83	1 83	1 83	1 83	1 83	1 83
Engineer	do	2 16½	2 33½	2 33½	2 33½	2 50	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00
Watchman	do	1 75	1 75	1 75	1 75	1 83½	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Laborer	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 00	1 00	1 00	1 00	1 00	1 00

STATISTICS OF WAGES—TANNERIES.

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Lang & Wanner, Cincinnati, Ohio—Continued.

Classes of employes.	Unit of payment.	DATES.												
		1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.
Bark-grinder	Day	\$1 83	\$1 83	\$1 83	\$1 83	\$1 16	\$0 83	\$1 00	\$1 00	\$1 00	\$1 00	\$0 87	\$0 83	\$0 83
Beam-hand	do	2 08	2 16	2 08	2 00	1 50	1 16	1 25	1 25	1 25	1 16	1 16	1 08	1 00
Roller	do	2 33	2 33	2 16	2 16	2 08	2 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Currier	do	2 33	2 33	2 16	2 00	1 75	1 50	1 00	1 50	1 50	1 41	1 41	1 33	1 25
Shaver	do	2 60	2 60	2 50	2 33	1 83	1 00	1 83	1 66	1 66	1 66	1 50	1 33	1 25
Finisher	do	2 25	2 16	2 00	2 10	1 50	1 41	1 50	1 33	1 33	1 25	1 16	1 08	1 00
Handlerman	do	2 33	2 33	2 00	2 00	1 25	1 08	1 08	1 08	1 08	1 00	1 00	87	83
Yard-hand	do	2 00	2 00	2 00	2 00	1 25	1 08	1 08	1 08	1 08	1 00	1 00	87	83
Engineer	do	3 00	2 66	2 50	2 33	2 10	1 83	1 66	1 58	1 50	1 33			
Watchman	do	2 00	2 00	2 00	1 83	1 33	83	1 10	1 10	1 10				
Laborer	do	1 60	1 00	1 08	1 06	1 00	89	1 00	1 00	1 00	87	83	83	75

REMARKS.—Harness and sole leather are the products of this tannery.

Payments are weekly and wholly in cash.

The hours of labor are 10.

No strikes have occurred at this establishment, and employment has been uninterrupted.

There has been a decrease in the efficiency of labor, which is ascribed to the fact that apprentices do not now learn the entire trade.

The trade is considered safe and healthful.

The cost of labor has averaged 16½ per cent. of total cost.

The following statement gives the selling prices of the two articles manufactured by this firm:

Year.	Harness leather, per pound.	Sole leather, per pound.
1860.....	\$0 29	.....
1865.....	89	\$0 46
1870.....	86	39
1875.....	85	39
1880.....	88	88

Hamilton, Martin & Co., Emporium, Pennsylvania.

Classes of employes.	Unit of payment.	DATES.														
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.
Foreman	Day	\$3 00					\$3 00					\$3 00	\$3 00	\$3 00	\$3 00	\$3 00
Bark-grinder	do	1 20	\$1 20	\$1 20	\$1 20	\$1 20	1 35	\$1 40	\$1 75	\$1 75	\$1 75					
Beam-hand	do	1 30	1 30	1 30	1 30	1 30	1 45	1 50	1 87½	1 87½	1 87½					
Roller	do	1 30	1 30	1 30	1 30	1 30	1 45	1 50	1 87½	1 75	1 75					
Handlerman	do	1 80	1 30	1 30	1 30	1 30	1 45	1 50	1 87½	1 87½	1 87½					
Yard-hand	do	1 30	1 30	1 30	1 30	1 30	1 45	1 50	1 87½	1 87½	1 87½					
Engineer	do	1 45	1 45	1 45	1 45	1 45	1 60	1 60	2 00	2 00	2 00					
Teamster	do	1 20	1 20	1 20	1 30	1 30	1 35	1 40	1 75	1 75	1 75					
Laborer	do	1 20- 1 30	1 20- 1 30	1 20- 1 30	1 20- 1 30	1 20- 1 30	1 20- 1 30	1 40	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75

REMARKS.—Dry-hide sole leather is made at this tannery.

No employes are under any expense for implements, materials, etc., except the carpenter.

Payments are in cash and monthly, or oftener if needed.

All classes work 10 hours a day.

The firm reports that it has never had a strike or a lockout.

Employment is constant. The tannery shuts down for repairs

two weeks in the warmest weather, but the men are usually provided with other employment.

The selling prices of dry-hide non-acid sole leather, the product of these works, were as follows for the years named: 1870, 30 cents, 1875, 25 cents; 1880, 22 cents.

Labor cost is given as 1½ cent in 1880.

The men working in this tannery are usually healthy.

STATISTICS OF WAGES—TANNERIES.

John A. Bechtel & Son, Newport, Pennsylvania.

Classes of employes.	Unit of payment.	DATES.								
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.
Bark-grinder	Day	\$1 10	\$1 05	\$1 00	\$1 05	\$1 00	\$1 00	\$1 20	\$1 25	\$1 25
Beam-hand	do	1 40	1 35	1 25	1 35	1 35	1 35	1 50	1 60	1 60
Roller	do	1 35	1 35	1 25	1 35	1 35	1 35	1 50	1 60	1 60
Handlerman	do	1 20	1 15	1 10	1 15	1 10	1 10	1 30	1 35	1 35
Yard-hand	do	1 20	1 15	1 10	1 15	1 10	1 10	1 30	1 35	1 35
Engineer	do	1 20	1 15	1 10	1 15	1 15	1 15	1 30	1 35	1 35
Watchman	do	1 20	1 15	1 10	1 15	1 15	1 15	1 30	1 35	1 35
Laborer	do	1 10	1 05	1 00	1 05	1 00	1 00	1 20	1 25	1 25

REMARKS.—Oak sole leather is made.

There have been some opportunities for over-time earnings by the beam-hands and rollermen. These would increase their wages about 10 per cent., and have not been included in the wages given.

Payments are weekly and in cash.

The opinion is expressed that any decrease in the hours of labor would be a disadvantage to the employes.

The tannery is operated continuously, and no strikes have occurred.

There has been something of a decrease in the efficiency of labor, arising from the fact that the abundance of employment in other industries in the state, iron and railroad, has created a scarcity of skilled labor, and the large number of immigrant tanners coming to the United States because of the decline of this industry in

Europe are less skilled than those brought up in the business in this country.

No labor-saving machinery has been introduced.

The following gives the selling price, labor cost, etc.:

Year.	Selling price of oak sole leather, per pound.	Labor cost of oak sole leather, per pound.	Percentage of wages to cost.
1875.....	\$0 35	\$0 2½	Per cent. 7
1880.....	37	2½	7

The business is considered healthful.

D. Gensemer & Co., Pine Grove, Pennsylvania.

Classes of employes.	Unit of payment.	DATES.																	
		1880.	1870.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.	1864.	1863.
Bark-grinder	Day	\$1 00																	\$1 00
Beam-hand	do	1 25													\$1 60½			\$2 00	1 25
Roller	do	1 50																	1 25
Finisher	do	1 50																	1 25
Handlerman	do	1 15													1 50				1 25
Engineer	do	1 58½																1 33½	1 25

REMARKS.—Oak sole leather is the product of this tannery.

Payments are monthly in cash.

The hours of labor average 9 a day, and the tannery runs 12 months in the year. Strikes and lockouts are unknown.

There has been no change in the efficiency of labor.

The proprietors have introduced no labor-saving machinery, but have made some improvements in the processes of manufacture, which have effected a reduction in cost without decreasing the number of hands or reducing the rates of wages.

The business is neither dangerous nor unhealthful.

The prices of oak sole leather, labor cost, and percentage of wages to cost are given as follows:

Year.	Selling price per pound.	Cost of leather per pound.	Percentage of wages to cost.
1865.....	\$0 42-\$0 60	\$0 05	Per cent. 14
1870.....	40- 42	5	14
1875.....	28- 38	5	14
1880.....	35- 38	4	12

STATISTICS OF WAGES—TANNERIES.

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W. H. Osterhout, Ridgeway, Pennsylvania.

Classes of employes.	Unit of payment.	DATES.									
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.
Foreman.....	Day ...	\$3 85	\$3 85	\$3 85	\$3 85	\$3 85	\$3 85	\$3 85	\$3 85	\$3 85	\$2 24
Bark-grinder.....	do	1 10	1 10	1 10	1 20	1 30	1 50	1 50	1 00	1 00	1 00
Beam-hand.....	do	1 30	1 30	1 30	1 40	1 50	1 70	1 70	1 80	1 80	1 80
Roller.....	do	1 25	1 25	1 25	1 30	1 40	1 00	1 00	1 75	1 75	1 75
Handlerman.....	do	1 10	1 10	1 10	1 20	1 30	1 50	1 50	1 00	1 00	1 00
Yard-hand.....	do	1 25	1 25	1 25	1 30	1 40	1 00	1 00	1 75	1 75	1 75
Engineer.....	do	1 75	1 75	1 75	1 75	1 75	1 50	1 50	1 50	1 50	1 50
Teamster.....	do	1 25	1 25	1 25	1 30	1 40	1 00	1 00	1 75	1 75	1 75
Watchman.....	do	1 40	1 40	1 40	1 50	1 00	1 00	1 00	1 00	1 00	1 00
Laborer.....	do	1 10	1 10	1 10	1 20	1 30	1 50	1 50	1 00	1 00	1 00

REMARKS.—Hemlock sole leather is the product of this tannery.

The employes have made some over-time, for which price and a half is paid. This would increase regular wages about 5 per cent., and has not been included in the table.

Free house-rent is allowed to the foreman in addition to the salary given above, and those of the employes who have been so situated as to trade at the proprietor's store have at times received a discount amounting to about 5 per cent. increase in wages.

Payments are partly in cash and partly in store-orders, the employes being requested, though not obliged, to deal at the store connected with the tannery. Money is paid on application if due.

The average hours of labor are 10 a day. The men work 11 hours a day when they can do so between sunrise and sunset, and only from sunrise to sunset when the days are not long enough for this. The proprietor expresses the opinion that 10 hours are a fair day's labor.

The tannery has been operated 12 months every year, sometimes slackening up a little, but never stopping entirely. The cause of irregularity has been a falling off of the demand for product and the high price of raw material.

"Strikes," the proprietor remarks, "are not common among tanners. I have never had but two in my experience, and they have lasted just long enough for me to settle up with the men and pay them off, which usually required about 5 minutes to a man. I then hired other men in their places. The difficulties have been caused by the demands of the men for higher wages than I could afford

to pay, and more than they could get in other places, and have therefore resulted in loss to the men as well as, to some extent, to myself."

The selling price of sole leather for 1880 was 25 cents per pound. The cost of labor to a pound of leather has been as follows:

1860.....	\$0 01½
1865.....	1½
1870.....	1½
1875.....	1½
1880.....	1½-1½

There has been no improvement in the efficiency of labor.

Quite a number of labor-saving machines have been introduced during the last 10 years, important among which are the hide-worker, a machine for cleaning hides, which will do the work of four men; the scrubbing-wheel, the cylinder brush-scrubber, which saves fully 50 per cent. of the labor of scrubbing, and the chain-drag for conveying tan-bark to the furnace, which saves about 95 per cent. of the labor of removing spent tan-bark.

The effect of all of these has been to lessen the cost of production.

Tanning is considered a healthy business.

The dampness in the beam-house and sweat-pits, the stooping posture of the beam-hands while at work, and the odor of the decomposed animal matter might be considered injurious, but good health and longevity usually attend the branches of manufacture to which these circumstances are incidental.

An establishment in Pennsylvania.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Foreman.....	Month..	\$69 16	\$69 16	\$69 16	\$69 16	\$69 16	\$69 16	\$69 16	\$69 16	\$69 16	\$69 16	\$69 16
Beam-hand.....	Day	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75	1 75
Shaver.....	do	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50	2 50
Finisher.....	do	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Yard-hand.....	do	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50
Scourer.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00
Stuffer.....	do	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00

REMARKS.—Oak-tanned calf and kip skins are the product of this establishment.

The remark is made in the schedule that the opportunities for extra earnings are so few as to be unworthy of consideration, and have not been included in the above table.

Payments are weekly and all in cash.

All classes work 10 hours five days in the week, and 9 on Saturday.

Employment is constant, and there have been no strikes.

The following table gives the selling prices and labor cost of the products of this tannery:

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Year.	SELLING PRICE.		LABOR COST.	
	Calf skin, per pound.	Kip skin, per pound.	Calf skin, per pound.	Kip skin, per pound.
1860.....	\$0 00	\$0 60	.....	.....
1865.....	2 00	1 25	.....	.....
1870.....	1 35	90	.....	.....
1875.....	1 35	90	.....	.....
1880.....	1 10	80	\$0 17	\$0 17

STATISTICS OF WAGES—TANNERIES.

Cunningham & Co., Nashville, Tennessee.

Classes of employés.	Unit of payment.	DATES.			Classes of employés.	Unit of payment.	DATES.		
		1880.	1879.	1878.			1880.	1879.	1878.
Currier.....	Day	\$2 25	\$2 25	\$2 00	Laborer	Day ...	\$1 10½	\$1 00	\$0 83½
Engineer.....	do	2 50	2 25	2 00					

REMARKS.—This tannery, which was established in 1866, produces tanned harness leather.

Payments are weekly and in cash.

All classes work 10 hours a day, and the works run 12 months a year.

There has never been a strike or a lockout in this tannery.

This has always been regarded as among the healthiest of trades.

The selling price, labor cost, etc., of harness leather is as follows:

Year.	Selling price per pound.	Labor cost per pound.	Percentage of wages to cost.
1870.....	\$0 45	\$0 14	35
1875.....	35	12	40
1880.....	38	13	40

An establishment in Virginia.

Classes of employés.	Unit of payment.	DATES.			Classes of employés.	Unit of payment.	DATES.		
		1880.	1879.	1878.			1880.	1879.	1878.
Foreman	Day	\$1 73	\$1 92	\$1 54	Yard-hand	Day	\$0 54	\$0 54	\$0 46
Beam-hand.....	do	58	58	54					

REMARKS.—The products of this tannery are sole, harness, upper skirting leather, and bridle leather, kip, calf, and sheep skin.

The only allowance mentioned is free house to foreman.

Employés are paid weekly in cash.

All hands work from 7 to 12 and from 1 to dark in winter, and from 6 to 12 and from 1 to dark in summer.

Employment is constant, and there have been no strikes.

The labor cost per pound of manufacturing the various products of these works are as follows:

Sole leather, 5 cents; harness leather, 7 cents; upper leather, 7 cents, and rough leather, 4 cents.

There has been no increase in the efficiency of labor.

An establishment in West Virginia.

Classes of employes.	Unit of payment.	DATES.										
		1880.	1879.	1878.	1877.	1876.	1875.	1874.	1873.	1872.	1871.	1870.
Beam-hand	Day	\$1 50	.....	\$1 50	\$1 50	\$1 50	\$1 50	\$1 50	\$1 75	\$1 75	\$1 75	\$1 75
Currier	do	1 50	.....	1 50	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75
Laborer	do	1 25	.....	1 25	1 25	1 25	1 25	1 25	1 50	1 50	1 50	1 50

REMARKS.—These works were established in 1863, and manufacture harness leather.

The above classes of employés are paid weekly, and the works have run 12 months a year.

The statement is made in the return that the prices of leather per pound for the years 1870, 1875, and 1880 were, respectively, 36 cents, 33 cents, and 35 cents.